The beautiful, durable and mundane

exploring notions of value in craft and design practice, in the context of sustainability

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Submitted in fulfilment of the requirements for the degree of

Master of Fine Arts

Signed statement of originality

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Abstract

The project addresses issues of value and meaning in objects while at the same time considering more sustainable approaches to designing, making and consuming, through the reuse of already existing materials. By exploring concepts such as durability and ephemerality, the precious and the mundane, I have sought to show possibilities for reconciling the production of objects with reduced environmental effects of their production, use and disposal. This was an issue that tended to be neglected during the period of modernist design with its embracing of technology and the machine aesthetic. Since the 1960's with the emergence of designers and writers such as Victor Papanek and Buckminster Fuller there has been a growing concern to develop more sustainable approaches to design, and a broader consideration of meaning and engagement with objects. Some of the significant contemporary designers addressing these issues include Paolo Ulian, Hella Jongerius and Constantin and Laurene Boym. It is with reference to this field that I contextualise my practice.

Through the research project I have recognised the importance of a local focus, in supporting more sustainable approaches and engagement with objects. In the process I have identified factors specific to designing with reuse materials, and have used them to guide the direction of the research. These include: material availability, perceived value of materials, time or cost required to achieve a high finish, design complexity and sophistication, and perceived value of the finished product. What has also emerged from the research is the importance of commercial considerations in designing for sustainability, as I believe economically viable objects contribute more than purely symbolic ones in influencing the perceptions and habits of designers and consumers. The project has shown that engagement with objects and sustainable approaches, when considered as integral to a design's development, can be mutually beneficial and lead to aesthetically sophisticated and highly valued objects.

Acknowledgements

I wish to thank Jessica Markwell who, through the course of this project, has given a great deal of practical and creative support, and critical advice, and has always been there at times of need.

I also want to thank my supervisors Kevin Perkins and John Smith, and Llewellyn Negrin (semester 2, 2005), for their consistent and welcome support and guidance. Also thanks to Philip Blacklow for his always excellent technical support, no matter the medium, and to Stuart Houghton and Dave Roberts for their help and advice, and to David Stevenson, post-graduate coordinator, Tasmanian School of Art.

I am also very grateful to Malte Wagenfeld from RMIT for agreeing to be a consultant on my project; Julian Pratt (also of RMIT) for his willingness to share knowledge; Cadbury Schweppes, in particular Clinton Luckock and John Sandel for their assistance with materials; Dr. Aidan Davidson for enthusiastic support; Allen Pullen for technical advice; Evette Karklins from Warrington International; Scott Blacklow from TAFE Tasmania; Peter Whyte; Jamie Spaulding; Marcus Tatton and Marie Bakker; everyone at the Resource Tip Shop; and Meryn from Going Solar.

Thanks also to my parents Ross and Judy Skinner for love and support.

Contents

Introduction

As resources are depleted, there is a growing need to consider sustainable approaches to design and consumption. Connected to this is the need to re-engage a sense of value and emotional attachment lacking in much that is industrially produced. In my research, I am attempting to unite these two aspects of value - sustainability and meaning/ personal attachment. These have received increased consideration by designers in the last fifteen years. It is my aim to give an overview of these developments, provide links between previously separated yet similar aspects, and incorporate them into the context of my practice, as a designer-maker.

In this research project I have developed multiple function lighting/furniture objects that explore contradictions and transformations in notions of value, by utilizing materials intended as disposable to create objects of value and permanence. Tensions between the ephemeral and the lasting, the mundane and the precious, are explored within the context of domestic objects. My aim has been to develop work that explores the derivation of value from emotional or evocative responses in the user, and the poetic potential of the re-contextualising of humble materials. The ethical utilisation of materials in terms of sustainability, re-use, and longevity is also central to the task of constructing value in the context of contemporary design practice.

I aim through the project to question terms often presented as mutually exclusive, such as aesthetics and ethics, where one is de-emphasised in order for the other to receive more attention.[1] I aim to show, as Jack

[1] An example being the title of the 7th Venice Architecture Biennale -'Less Aesthetics, More Ethics' - implying that more (of one) must mean less (of the other). Elliot, J 2004 'Reconciling Eco-Ethics and Aesthetics in Design', *Design Philosophy Papers*, #2, <www.desphilosophy.com/dpp/home.html>.

Elliot writes in *Design Philosophy Papers*, that 'the designed object can form the locus for aesthetics and ethics to mutually reinforce each other in the production of an intentional positive form of meaning.'[2]

In his review of Renny Ramaker's book *Less+More;Droog Design in Context* in *Crafts* magazine, Jeremy Myerson states that there is 'an inherent recognition of the tension that lies between the need to enrich the experience of living with objects, and a simultaneous desire to reduce the environmental impact of an accelerating cycle of over-production.'[3] This is one of my motivations for approaching this subject. In their book *Cradle to Cradle,* William McDonough and Michael Braungart challenge the current environmental discourse of limits – use less, be less bad – and, with nature as the model, instead propose a system of abundance. They point out that our current system rapidly converts resources into un-useable forms, but suggest that if we changed to a system of endlessly recirculated 'nutrients' within closed-loop cycles, our systems, like nature, could be regenerative not degenerative. 'Sweeping away, shutting out, and controlling nature's imperfect abundance are implicit features of modern design, ones rarely if ever questioned.'[4] Through the designing and making of objects that question such implicit features of modern design, it is my intention to develop practical, producable objects that integrate approaches such as material reuse within the context of contemporary furniture and object design, in locally produced limited edition/small batch production.

I have been designing and making furniture and lighting since 1982. I graduated with a Bachelor of Fine Art in furniture design from the University of Tasmania in 1988. In 1993 I spent 5 months in Tokyo (after

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[2] Elliot, J.
[3] Myerson, J 2003, Review, *Less+More;Droog Design in Context*, in Crafts Jan/Feb, p.63
[4] McDonough, W & Braungart, M 2002, *Cradle to Cradle: Remaking the way we make things*, North Point Press, New York, p.86

being awarded the Australia Council's studio there), and 2 months in Europe. On return to Hobart I began part-time work at the Resource TipShop, a cooperative business that is licensed to salvage and sell goods from the Hobart landfill. As well as continuing to exhibit in design group exhibitions, I also made work for "Art from Trash", Resource's annual educational exhibition. Gradually my design practice was influenced by not only what I found on the tip but by my research into more sustainable approaches to designing and making. In considering post-graduate study I felt a project researching these ideas was important, not only for the development of my own practice but also because it was an aspect rarely considered in the local context of furniture and object design.

It was my initial intention when beginning this project to develop a range of objects, each a manifestation of aspects of sustainability and emotional attachment in object and furniture design. However, as the project developed both practically and theoretically, I recognised the need to clearly delineate the project's parameters. I felt the project would be most relevant and successful when focusing on my immediate practice, therefore the project does not investigate sustainable approaches for high volume furniture or object manufacture but concentrates on locally produced, limited edition/ small batch production. The project also does not encompass recycling but rather employs reuse. While "Recycling" involves the processing of materials (cleaning, grading, shredding or blending) for remanufacture [5], "Reuse" utilizes a product or material after its initial lifespan for an identical, similar or new use, without reprocessing the constituent materials.

For a designer/maker, reuse is a more accessible, sustainable and simpler method. Reuse does not require industrial processes, so less energy is required and while recycling often requires centralised facilities, reuse encourages a local approach. Incorporating reuse materials can require extra consideration of methods of assembly, but this can encourage a

[5] Fuad-Luke, A 2002, *The Eco-design Handbook*, Thames and Hudson, London, p.327

consideration of disassembly, for the next 'life' of the materials. Simplicity and 'openness' of construction can also bring engagement with users through a coherence of form, way of making and material.[6] Reuse as a technique also suits my approach to designing which is one of constructing and assembling form, rather than moulding or removing. Reuse is a sustainable, practical approach offering designers a basis for innovation. In this project I have utilized two forms of material reuse. *Post-consumer* reuse takes materials and objects that have been discarded by consumers (in this project, purchased from the Tipshop or by salvaging) while *post-industrial* material reuse uses materials from industries after their initial use, prior to disposal (in this project, packaging from Cadbury Schweppes).

The problem of un-sustainability is a vast one being tackled from diverse directions. For the area of small scale craft furniture and object design, its impact is assumed to be insignificant which, comparatively, it is. It may seem questionable 'to subject small productions to stringent environmental standards when elsewhere material is being wasted on a massive scale.'[7] As Ettore Sottsass argues 'people who build warships and use tons of steel need to bother about ecology. Don't let them tell me about it, when I make handles every 5 years.'[8] Similarly Matali Crasset writes that 'for the time being ecology will remain something that students learn about and study in design schools.'[9] However, I believe the best way to move to a more sustainable system is through individuals considering their personal decisions and actions, in the context of their own lives. I believe the significance is one of 'problematizing' - identifying the problem (within the context of my practise), creating the question - rather than providing solutions. While my focus in this project is on limited edition/small batch production, the methods and approaches I have developed are applicable to other forms of production.

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[6] van Hinte, E 1997, *Eternally Yours; visions of product endurance*, 010, Rotterdam. p. 193

[7] Ramakers, R 2003, *Less+More:Droog Design in Context*, 010, Rotterdam, p.10

[8] Ramakers. R, p.10

[9] Franzoia, E 2004, 'Matali Crasset', *Abitare* 442, p.154

Significant to the project is also a focus on the local. Possibilities and new approaches as mentioned above come from local approaches. As Stuart Walker says in *Eternally Yours* 'sustainability will be about achieving a complex and fragile balance between tradition and innovation'[10] to 'harmonise the benefits and reality of mass production approaches with the benefits of local-scale design and production.'[11] I believe the approaches and ideas outlined in this project provide a site for opportunity and innovation, and show positive benefits to designers and consumers of changing their approach to designing and consuming. They also provide a new standard of measure for the integration of sustainable approaches into designers' practices, as Stuart Walker says in his article "Games on a stone pavement"[12], a foundation on which to establish ideas. There are a number of current definitions for design processes that incorporate environmental factors, including Green Design, Environmental Design, Ecological Design, and Sustainable Design. A useful and inclusive one defines Sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'[13] Sustainability in the context of this project is a search for new approaches to designing and making that recognise the impacts objects of our production have on social, environmental and economic systems, and the responsibility of each of us to change from wasteful approaches to regenerative ones. It is with reference to the above considerations, background and parameters that I locate my project.

Chapters 1 and 2 look at the context within which my research project is located. In Chapter 1 I research the background, issues and current

[10] Walker, S 1997, 'Conscientious Objects: Product aesthetics and sustainability', in van Hinte, E, *Eternally Yours; Visions on Product Endurance*, 010, Rotterdam, p. 172
[11] Walker, S 1997
12Walker, S 2001,*Games on a stone pavement:design,sustainability and meaning*, <www.ucalgary.ca/.../faculties/profiles/walker/Games_Stone_Pavement_paper.pdf>.
[13] This definition is from the Brundtland commission in 1987, a UN Environment Commission that was a precursor to the later Earth Summits of 1992 and 2002.

literature regarding sustainable design and the construction of value in objects. In Chapter 2 I highlight influential designers and how they incorporate sustainable approaches into their practices, while dealing with the issue of value in objects. Chapter 3 focuses on the practical research and describes how the project developed over the course of study including approaches and techniques used, and successes and failures. It includes a discussion of each of the works in the final submission. I discuss products and materials, forms, techniques and functions explored during the research project. The conclusion sums up the outcomes of and the contribution made by the project to the field of sustainable design.

Chapter 1
Context: Background and Issues

History of 'good' goods [14]

In this section I will examine the background and development of approaches that question not only the sustainability of systems of production and consumption, but of value and meaning in objects, and how there has been a tendency to focus on one of these aspects while neglecting the other. Designers have either tended to focus on issues of value and meaning in objects, while neglecting issues of sustainability, or have incorporated sustainable materials and approaches while neglecting

Fig. 1. L-R, Ettore Sottsass, *Tigris Vase,* 1983, and *Euphrates Vase,* 1983; Constantin and Laurene Leon Boym, *Salvation Ceramics,* 2002.

to address issues of value and meaning in objects. I will be exploring the links and separations within and between the two research areas. Throughout this section, my aim is to document the gradual reconciling of more sustainable approaches to design, with the recognition of the importance of meaning and engagement in the objects that surround us.

'Good' Design version 1 - Modernism – less is more

Modernism as it applied to design, developed out of Germany, Austria and the Netherlands in the early part of the 20th century as a reaction to, and development from, rapid developments in technology and industrial capacities. Designers saw the opportunity of utilizing standardization and new technologies in the production of quality, durable goods at

[14] "Good Goods" was the name of a range of products designed by Philippe Starck in 1998, for La Redoute

affordable prices to contribute to social reform.[15] Social considerations, in unity with form and function, were a priority of the teachings of the most famous centre of Modernist teaching, the Bauhaus in Germany. Simplifying and standardizing components contributed, in both architecture and product design, to a means of addressing the needs of the masses [16] (and later the *wants* of *consumers*). However, the importance given to function and standardization over individuality and plurality of meaning, and elevating 'expert judgement over everyday experience'[17] brought disillusionment with modern design from both designers and the general public.

As John Thackara states in *Design after Modernism*, design 'expressed in material form the ideas that modernism has thrown up: the progressive nature of technology, celebration of the machine, an awareness that the present is radically different from the past.'[18] Writers have recognised this uncritical 'futurist' aspect of modernist design - a utopian vision of industry and man, separated from modernism's egalitarian roots - and the diminishing of genuine social and cultural considerations, as a central reason for social and creative reactions against it.[19] Modernism, in its alliance with the economics of unlimited growth, has been presented as a threat to the social and biological environment. 'To be modern is to find ourselves in an environment that promises adventure, power, joy, growth, transformation of ourselves and the world – and, at the same time, that threatens to destroy everything we have, everything we know, everything we are.'[20]

'Good' Design version 2: Memphis – more and more

By the late 1960's designers began to question whether the mass-market approach of production, and the modernist aesthetic, were any longer an

[15] Fuad-Luke, A 2002 *The Eco-Design Handbook*, Thames and Hudson, London, p.10
[16] Fuad-Luke, A p.10
[17] Thackara, J 1988, 'Beyond the object in design', in J Thackara, (ed) *Design After Modernism*, Thames and Hudson, London, p.11
[18] Thachara, J p.11
[19] Thachara, J p.14
[20] Berman, M 1988, 'The experience of modernity', in J Thachara, p.36

appropriate response to the diversity of contemporary culture found in a pluralist society.[21] Design was embracing new approaches that explored ambiguity while accommodating cultural diversity. While a number of postmodern designers began to focus on the issue of value and meaning in objects there was at the same time a tendency to neglect ecological considerations. This was particularly the case with the Memphis designers. Memphis, one of a number of experimental design groups that emerged out of Italy during the 1970's and 80's, recognised the significance of meaning in objects, and their ability to express 'memory, emotions and feelings' [22], no longer prioritizing function. 'He (Andea Branzi) theorises what most non-designers already know: that we buy and acquire things for all kinds of reasons, influenced by our memories and associations, our aspirations and our friends, as well as what we see on television and in museums.' [23] For Memphis, an object, such as a piece of furniture, was a means of communication, an accumulation of signs. They recognised that beauty, function and utility were not static, objective, or calculable quantities, but highly complex variables related to cultural conditions, values and desires. They aimed to project new possibilities onto everyday objects, appealing to the sensual rather than the intellectual, using signs not yet codified, 'born and recycled according to the ambivalent logic of desire.' [24]

The designers associated with the Memphis group embraced popular culture in their designs, with chaotic juxtapositions of texture, pattern and material, challenging modernist notions of good and bad taste. 'Memphis decoration comes,' Radice says 'like the laminates, from unorganised cultural areas such as suburbs.'[25] They explored the notion of the banal by using mundane materials in new contexts, combining the cheap

[21] Woodham, JM, 1997, *Twentieth Century Design*, Oxford University Press, Oxford, p.191
[22] Fitoussi, B 1998, *Memphis*, Thames and Hudson, London, p.13
[23] Dormer, P 1993, *Design since 1945*, Thames and Hudson, London, p.28
[24] Radice, B 1985, *Memphis: Research,experiences,results,failures and successes of new design*, Thames and Hudson, London, p144
[25] Radice, B 1985, p36

alongside the expensive and, by utilizing designer-makers, rediscovered craftsmanship. However, while the designers of Memphis opened up design to be more playful and open-ended, they were unconcerned with broader social and environmental consequences. Their challenge was to the hierarchy of design not the broader phenomenon of unlimited economic growth. While other designers were beginning to consider more sustainable approaches to design and question the economic system of extraction, manufacture and disposal, the Memphis designers did not address these broader issues. While mass production has shifted to become mass culture, delivering a diversity of styles, the question is whether it delivers more meaning and involvement. Thackara argues that the broader phenomenon – postmodern design - is 'no longer concerned with individual products, but with whole systems; it is not just about experts solving problems, but about collective participation; along with new science, it is not a rules-based game but a creative process, which can make products and places unique.'[26] It is these aspects of postmodern design that have the potential of fulfilling the two aspects of my project, of incorporating sustainable approaches and developing engagement with objects.

'Good' Design version 3: Ecodesign – more with less[27]

Consideration of the environment and our impacts on it became an issue for designers and writers during the 1960's. Architects such as the American Frank Lloyd Wright and Alvar Aalto from Finland had earlier incorporated concepts of nature, space and social harmony into their designs. However, it was the generation of designers who followed them

[26] Thackara, J 1988, p.32

[27] It should be noted that many of the characteristics of ecodesign which I describe in this section were common practice prior to modernism, but became redundant in the rapidly industrializing and urbanized countries of the late 19th and early 20th centuries. Fuad-Luke, A, 2002, *The Eco-Design Handbook*, Thames and Hudson, London, 2002, p.8

(who in some cases were their students) that pioneered new approaches to thinking and designing from an environmental perspective. From the austerities of the forties and early fifties, had come the development of the consumer society in the '50s and '60s in America, Western Europe and Japan. While rising levels of consumption were related to economic development and associated rising living standards, it also meant increasing damage to the environment and greater social inequalities. Some designers began to question consumerism, including its dependency on fossil fuels, its wasted resources and cycle of unfulfillable material desires, and demanded that a consideration of the environment be part of the equation. Many of these designers were highly creative individuals who proposed solutions to problems we are only just now recognising as significant. In his book *The Waste Makers*, published in 1960, Vance Packard warned that America 'faces the hazard of developing a healthy economy within the confines of a psychologically sick and psychologically impoverished society.'[28] While challenging the 'virtue of wastefulness' he also hints at the risks we paradoxically face in a society of over-abundance.[29]

In his book *Operating Manual for Spaceship Earth*, published in 1969, Richard Buckminster Fuller critically assessed humankind's development and set a blueprint for the future. Through his highly effective analogy of a spaceship, he shows how we live within a closed system and must begin to better utilize resources, reduce our dependence on fossil fuels and explore the potential of sustainable, renewable energy sources such as solar [30], wave and wind power. 'We must undertake to increase the performance per pound of the world's resources', he said 'until they provide all of humanity a high standard of living.' [31] While many of his predictions were insightful and far-reaching, his confidence in

[28] Packard, V 1970, *The Waste Makers*, Penguin, London, p.293
[29] Packard, V 1970, p.302
[30] Fuller, RB 1969, *Operating Manual for Spaceship Earth*, Feffer and Simons, London and Amsterdam. p.87
[31] Fuller, RB 1969, p.128

technology now seems unrealistically optimistic. His contribution however, was to point out the risk of clinging to development patterns of the past. As he states on the first page, in a shipwreck, a piano top may keep you afloat, but that doesn't mean that the best way to design a life preserver is in the form of a piano top. [32]

The need to study alternative models for human development was a concern shared by many in the emerging environmental design movement. They looked to nature as a model, and also considered how other civilizations created human landscape within, and sustained by, nature. Designers such as Amory Lovins looked to the cultural values of traditional architecture and the need to consider the human-scale. He developed the notion of soft energy paths, means of channelling renewable energies on a local scale, as opposed to hard energy, which is centralized, costly and polluting. Along with his partner Hunter Lovins, he established the Rocky Mountains Institute in Colorado in 1982, where research was conducted on alternative energy sources, and on designing energy efficient structures that successfully integrated dwelling, farm and workplace. They also had a social and moral imperative, sharing with Vance Packard a concern for the consequences of wealth, and the habits and expectations it creates. 'These habits are accompanied by an irrational lack of care about usefulness or waste.'[33] They saw this as a problem not just for individuals but for society as a whole. Their focus on local, integrated and economically viable development is a common theme within environmental design.

Unlike those previously mentioned, Victor Papanek was an industrial designer, but like them he incorporated environmental concerns within a working design practice. He was both a designer and educator, and with the publication of *Design for the Real World* (1971) he gave the design industry a jolt. In it, he critically assessed design's participation in a

[32] Fuller, RB 1969, p.9
[33] Hawken P, Lovins, A & Lovins, L. 1999, *Natural Capitalism: Creating the Next Industrial Revolution*, Little and Brown, Boston.Soft Energy Paths P.xiii

system of wasteful production that focused on wants not needs, and called for designers to be more socially and environmental responsible. 'Design must', he wrote, 'become an innovative, highly creative, cross-disciplinary tool responsive to the true needs of men. It must be research orientated, and we must stop defiling the earth with poorly designed objects and structures.'[34] In *Design for the Real World*, Papanek addresses the need for ecological responsibility, by highlighting the depletion of natural resources, the broad extent of pollution (from the manufacturing, use and end of life product stages) and the recognition that technology alone won't solve the problems.[35] However, it is the social and ethical dimension that is his main focus, and for me, the most insightful. Throughout the book he examines problems and misconceptions behind the then current (1970's) system of economic development, production and consumption, incorporating social, ethical, environmental and economic viewpoints and putting forward solutions and ways forward. Many of these have formed the key concepts of what is now called Sustainable design. I consider sustainability, in the context of this project, as a search for new approaches to designing and making that recognise the impacts objects of our production have on social, environmental and economic systems, and our responsibility to change from wasteful approaches to regenerative ones.

Papanek's focus on positive, new approaches - typified by the structure of the book divided into two parts, 'How it is', 'How it could be' – was taken up by other writers also demanding a fresh outlook. They argued that being 'less-bad' was no longer a solution to the problems faced, only 'a kind of guilt management for our collective sins.'[36] In the varying approaches put forward by the writers, there is a common desire to address a broader field than simply form and aesthetics alone. Unlike the Modernist approach of the early to mid-twentieth century, the developing

[34] Papanek, V 1984, *Design for the Real World*, Thames and Hudson, London, p.x
[35] Papanek, V 1984, p.253
[36] McDonough, W & Braungart, M, 2002, *Cradle to Cradle: remaking the way we make things*, North Point Press, New York, p.66

eco-design movement recognised not only environmental imperatives but also the need to consider differing cultural contexts and the needs of the user. The importance and necessity of taking into consideration these dual imperatives is summed up well by Stuart Walker who points to the role that ethics and aesthetics can play in the evolution of a lasting, meaningful and more benign material culture.[37] The power that ethics have in determining taste can be seen where knowledge of child slavery or cruelty to animals in the production of an object can change consumer preferences. He believes that a product's aesthetics embody the characteristics of the system that produced it, so that a system of endless production and consumption linked to environmental and cultural degradation creates a material culture that is transient, superficial and lacking in deeper, spiritual values. He does, however, see the potential for products with a 'sustainable aesthetic', when manufactured within a system which adheres to sustainable principles.

Innovative design that incorporates an ethical component into each stage of the product's development - its intention, its making and its place in the world - will deliver meaning and attachment. In his article, "The Manifestation of Meaning" he states:

> By aligning our practises with spiritual, ethical and environmental priorities, we can start producing products which, through the processes that lead to their existence, and through their very nature, become manifestations of meaning.[38]

He also highlights the link between sustainable approaches and local scale initiatives. 'Good' design for most of the last century centred on form and function, in alignment with industrial priorities of increased efficiency, production and consumption. Even when, in recent years, environmental consequences have become apparent, or where designers have attempted to challenge the system of extraction, manufacture and

[37] Walker, S 1999, 'The Manifestation of Meaning', *The Design Journal*, vol.2, no.2, p6
[38] Walker, S 1999, p8

disposal, the system continues unabated. Now more than ever, 'good' design must help to 'create a world that is less wasteful, but also to create more meaningful relationships with our environment.' [39] In the following section I will explore some possibilities for achieving this.

Exploring Contradictions and complexities

Through the development of my research I have come to recognise the complexities and contradictions in attempting to link sustainability, design, value and emotional attachment to objects. However, rather than a source of frustration, this is for me the interesting and unexpected part of my project. When writing the initial research proposal that developed into the central argument, I utilised binary opposites such as man-made vs natural materials, ephemeral/durable and precious/mundane expecting to elevate one above the other. What I realised instead was that these are not necessarily diametrically opposed to each other. Thus in the following section I will explore, through the work of writers and designers, how these apparently contradictory dichotomies can be reconciled.

Man-made vs natural materials

Selection of materials is an important strategy in sustainable design. There are toxic materials to clearly avoid, such as CFC's, chromium and mercury. Natural materials such as ceramic, stone and wood are generally encouraged because of their low embodied energy.[40] However, selecting natural materials is not always preferable. A good example is cotton, which accounts for 25% of the world's insecticide use. In many countries, this leads to increased health risks for farm workers and

[39] Wanders, M, in Fiell, C & Fiell, P (ed) 2003, *Design for the 21st Century*, Taschen, Cologne, p.182

[40] Total energy stored in product or material, including energy in the raw materials, transport, manufacturing-a means of assessing environmental impact. Fuad-Luke, A 2002,*The Eco-design Handbook*, Thames and Hudson, London, p. 276

communities.[41] Cotton production also consumes large amounts of water for irrigation, and requires chemicals for bleaching, softening and dying.[42] Organic cotton is a good alternative, as is hemp. *Tencel* is a recently developed, man-made fibre using natural cellulose from managed forests. It is important to emphasize that decisions can rarely be made on easily quantifiable figures alone and that value judgements play a large role. For example, does a designer utilize a sustainably produced product if it has to be imported from another country, or local solid, untreated timber from a renewable resource that has been sourced from poorly managed forests.[43]

It is these often conflicting considerations that I have negotiated in my own work through the course of my project. Many new, eco-friendly products and materials are available in Europe and the United States. However, importing them to Tasmania would invariably remove much of the ecological advantage over buying locally available, less eco-friendly ones. It has often been at this ethical 'quagmire' that reuse appeared as a simple, local alternative. But even here, complications arise - I have utilized (post industrial) reused packaging ply as an alternative to Medium Density Fibreboard[44], however, I have to balance the advantage of local reuse (savings in energy and resources) with the potential off gassing from an imported plywood not intended to perform domestic functions. In another project though, I have utilized reused masonite (or High Density Fibreboard)[45] which, laminated with water-based glue, can potentially be composted, contributing to the biosphere, the advantages of which are elaborated below.

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[41] Datschefski, E 2001, *The Total Beauty of Sustainable Products*, Rotovision, Crans-Pres-Celigny, p.20

[42] Datschefski, E 2001, p.161

[43] McLaren, W 2004,'Being Specific', *Environ*, Winter issue, p.32

[44] Commonly known as MDF, it is made with wood pulp and Urea Formaldehyde glue binder. Apart from the dangers of this type of glue in the manufacturing process, it is also now known to "off gas" toxins years after installation, in homes and offices. Low or zero Formaldehyde MDF is not yet readily available in Australia.

[45] Masonite is a wood-based High Density Fibreboard which, unlike MDF, does not employ glues, but relies on resins within the wood pulp as binders.

Recycling vs reuse

As stated in the introduction, recycling and reuse are different approaches each with advantages and disadvantages depending on the situation in which they are used. Ed van Hinte states:

> Recycling itself is quickly changing from an idealist strategy into a thriving industry. However it is not just the industrial process of producing and recycling that causes all the waste. Its results play their part as well, for product quality has become subordinate to the economic activity of material transformation. [46]

This form of recycling, aligned to the mind-set of modernity with its instrumental reason and pragmatism [47], slots comfortably into the economy of the technological, 'as resource: intrinsically calculable, capable of being forced into and maximalised within technological regimes of production.'[48] This form of recycling rarely addresses issues of overproduction and overconsumption, and its short-comings raise the question of how to integrate sustainable approaches into an economic system without continuing the mistakes that were delivered by that system. The local example of recycling in Tasmania is a good case, where all recyclate is transported to mainland states for reprocessing, and the question of the positive and negative ecological impacts of such a system is very much unresolved. Recycling requires a sustainable system not just a sustainable product.

As McDonough and Braungart argue, strategies such as recycling (or *downcycling* [49]) often simply extend the negative consequences of waste and pollution. They argue that as the products being recycled were rarely designed with recycling in mind, due to the mixture of materials, additives and chemicals, the resultant 'recycled' material is often of a

[46] van Hinte, E 1997, *Eternally Yours: Visions of Product endurance*, 010, Rotterdam, p.18
[47] Jencks, C 1996, *What is Post-Modernism?*, Academy Editions, London, p.62
[48] Ziarek, K 1998, 'Powers to Be: Art and Technology in Heidegger and Foucault', in *Research in Phenomenology*, Academic Research Library, p.174
[49] McDonough, W & Braungart, M 2002, *Cradle to Cradle: remaking the way we make things*, North Point Press, New York, p.56

much lower grade. It also may have more additives than 'virgin' plastic.[50] Thus, this form of recycling may be only effective for one or two generations, and is in effect only postponing the landfilling and eventual waste of that resource. The authors instead propose a system where everything produced nourishes two distinct and separate systems, the biosphere and the technosphere. These two spheres are fed respectively by: biological nutrients (biodegradable material that can decompose and regenerate the living system); and technical nutrients (ones that continually recirculate within closed-loop industrial cycles).[51] As the authors point out, resources are not running out, material is finite, it's just that we are rapidly converting these resources into un-useable forms.

There is now a growing recognition of the need for a new approach to recycling, where materials used are easily disassembled, new materials such as plastics are designed with true recycling in mind (less pigments and additives), and developments in bio-materials continue. Later in this chapter I will explore possibilities of sustainable recycling of the kind advocated by McDonough and Braungart. As stated in the introduction, in this project I focus on reuse, as a more accessible, sustainable and simpler method which can also bring engagement with users. The Dutch designer Tejo Remy, using Robinson Crusoe's island as a metaphor, improvises with things that lie at hand. He believes that existing objects 'add an extra dimension' and that objects such as his *Chest of drawers* 'represent an agglomeration of memories.'[52] In Chapter 3, where I focus on the practical research, I will outline possibilities I have explored for expanding the potential of reuse from the context of one-off designs to small-to-medium batch production.

Fig.2. Tejo Remy, *Chest of Drawers*, 1991.

[50] McDonough, W & Braungart, M 2002, p.58
[51] McDonough, W & Braungart, M 2002, p.93
[52] van Zijl, I 1997, *Droog Design 91-96*, Centraal Museum, Utrecht, p.107

Durability vs Ephemerality

The broad concept of *durability*, extending the useful life of objects, offers a means of addressing issues of sustainability and emotional attachment, highlighting potential directions and problems. It is often counterposed to the concept of *ephemerality* or transience. A recurrent theme throughout my research however is to show that these two concepts are not necessarily opposed to each other. I will look at each in turn before discussing how they can be reconciled.

Strong, well-designed and built objects are a good alternative to short-lived products destined for landfill. These qualities often also give objects enduring meaning. Traditional joinery for example can provide durable and enduring objects, and through the use of particular materials 'impart a rich haptic, kinaesthetic experience.'[53] The Japanese stairway chest Hako-kaidan built in the early 20th century displays both durability and multifunction. The term *enduring* allows for the emotional engagement of the user, where change from natural forces, or simply use over time, contribute to a strong attachment to the object. This theme is explored in *Eternally Yours* where van Hinte argues:'Every new object should somehow respect old age. They should be like bearers of "old metaphors."' He goes on to explain why materials like leather and wood age so beautifully: 'they were once alive and aging, and therefore possess the natural ability to deal with time. Even when new they carry their oldness with them.'[54]

Fig. 3. Stairway chest (*hako-kaidan*), early 20th Century.

Cameron Tonkinwise explores this further challenging the notion of beauty as a realm separate from the changing materiality of things. He points beyond the merely pleasing form, to a pleasurable function; beauty-*in-use* and the potential 'that such an escaped beauty just might be

[53] van Hinte, E 1997, *Eternally Yours: Visions of Product endurance*, 010, Rotterdam, p.194
[54] van Hinte, E 1997, p. 99

motivating of sustainment.'[55] This kind of relationship allows meanings to change over time as one lives with, and experiences, the object. Such an approach could form an alternative to the current 'forces that are concealing piles of wasted short-life "durable" goods beneath the changing appearances of the beautiful.'[56] Another factor contributing to the longevity of objects is their importance within social rituals such as births, marriages, holidays or meetings as these can give rise to a certain emotional value, and may lead to product longevity.[57] Memories, although considered intangible, also contribute to the durability of objects. As seen in the example of Tejo Remy's Chest of Drawers, reuse can contribute to an enduring quality in objects. The feelings an object evokes can have greater meaning than its function or form, as exemplified in the emerging 'experience economy' where companies promote associations and experiences rather than the physical functions their products provide.

However, as van Hinte points out, an item can be 'a very weak vessel for memories, because it can be filled and refilled time and time again. There is nothing intrinsic in its memory value, it can always be re-translated.' [58] Another term with allegiances to the idea of durability/enduring is *multi-function*. If a product or service can perform a number of functions, it is minimizing resource use and environmental impact. While modularity could result in restrictions in the future, it may also allow flexibility to adapt to changing demands or restricted living spaces, strengthening the bond between user and product or (in the case of leasing) provider and customer.[59] Multi-functionality allows an object's functions to be determined by the user, so providing both engagement and sustainability, through consideration of material use.

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[55] Tonkinwise, C 2003, 'Beauty-in-use', in A-M Willis (ed.), *Design Philosophy Papers collection 1*, Team D/E/S, Brisbane, p.66
[56] Tonkinwise, C, p.67
[57] van Hinte, E 1997, p.39
[58] Koskijoki, M 1997 'My Favourite Things', in van Hinte, E, *Eternally Yours: Visions of Product endurance*, 010, Rotterdam, p.138
[59] van Hinte, E 1997, *Eternally Yours: Visions of Product endurance*, 010, Rotterdam, p.77

Van Hinte proposes the idea of a career plan for every product, considering not just discarding and recycling but cleaning, repairing, transport, spare parts, and sharing information through newsletters.[60] He believes that:

Fig. 4. Shin and Tomoko Azumi, *Table=chest*, 1995.

> communication and spreading information can support all phases of the product life cycle, incidents concerning the product or its providers can be taken advantage of, not just to promote new articles, but also to make old ones more experienced and dignified in the eyes of their users.[61]

For an object to be enduring and durable, the designer must consider its material ability as well as its immaterial opportunity to age in a dignified way.[62] Unfortunately, many products today are never given the opportunity, in the rush for constant newness. Conspicuous consumption and obsolescence are still central to our economy.

Consumption, however, doesn't necessarily have to be linked to waste and disposability, but can be tied to emotional attachment. Consumption is more than just purchasing, but also the conversion by the owner of meaning and the 'transformation of "alienated" commodities to "sociable" possessions.' [63] As Maria Koskijoki points out, the practice of *collecting* things represents an ideology of preciousness.[64] If all consumers bought and cherished their possessions with the care of the collector, consumption could provide a means of addressing sustainability and engagement. In certain situations, however, impermanence can be both a sustainable and meaningful strategy. Prolonging the life of a product may delay improvements in its

[60] van Hinte, E 1997, p.27
[61] van Hinte, E 1997, p.57
[62] van Hinte, E 1997, p.19
[63] Koskijoki, M 1997, 'My Favourite Things', in van Hinte, E, *Eternally Yours: Visions of Product endurance*, 010, Rotterdam, p.136
[64] Koskijoki, M 1997, p.139

efficiency, unless it was designed to allow for upgrading.

Resolving such conflicts is a matter of a ' "backwards and forwards" checking process, testing each proposition to see that it does not have unwanted effects elsewhere.' [65] Packaging design is an area that could better incorporate the strategy of transience, as seen in the persistence of plastic bags in landfill. Currently, many products are needlessly outlived by their packaging. *Persistence* or unwanted *permanence* are perhaps the downside of durability.

With the intention of addressing this problem, biodegradable *Bioplastics* are being developed from plant starch, such as corn, wheat or potato starch. These decompose after discarding without affecting their strength while in use. They are used for such objects as cutlery and plates, food packaging, pens, clothing and credit cards. The Radius toothbrush is made from cellulose, derived from wood pulp. Five kg of wood make 40 toothbrushes (an equivalent amount makes one copy of a Sunday paper) and utilizes re-usable and recyclable packaging.[66] The Dutch designer Jurgen Bey's *Gardening bench* [67], is another example of 'sustainable' ephemerality. It was commissioned as seating for Couleur Locale, a park in eastern Germany, and uses high pressure extrusion to generate benches of dried grass, leaves and woody prunings. Waste materials are from renewable sources and compostable. It is a good example of recycling on a local level, relevant to its context, and displays the 'beauty of deterioration.'[68]

Victor Papanek addresses the 'joy of *impermanence*' [69] with

Fig. 5. Jurgen Bey, *Gardening Bench*, 1999.

[65] Lewis, H & Gertsakis, J 2001, *Design+Environment*, Greenleaf,Sheffield,p.38
[66] Datschefski, E 2001, *The Total Beauty of Sustainable Products*, Rotovision, Crans-Pres-Celigny, p.146
[67] Fuad-Luke, A 2002, *The Eco-design Handbook*, Thames and Hudson, London,p.25
[68] Ramakers, R 2002, *Less+More: Droog Design in Context*, 010, Rotterdam, p.82
[69] Papanek, V 1995, *The Green Imperative*, Thames and Hudson, London, p.146

the example of kites, where the activity is the important element, and the object is not intended to be long-lasting. Home-made kites also address the idea of participation and engagement. Other examples he uses are sandcastles and ice sculptures, each requiring many hours of care and craftsmanship. For the English artist Andy Goldsworthy, participation and impermanence are the primary concepts, as the life of the 'finished' object may be only a matter of minutes. This embracing of the temporary and the transitional, in a broader context, could help in recognising and celebrating our own temporal existence and our connection to the changing natural world. The ephemeral is a theme that runs through much of Japanese art and culture, found in the temporal beauty of cherry blossoms or fireworks. In the example of the Ise Shrine, south of Tokyo, we see the concepts of disassembly, transience and durability together. Every twenty years it is ceremonially rebuilt on a plot next to the existing one. This addresses transience on the broader, eternal scale and forms, according to Papanek, a 'rich web of permanence through continuity.'[70] Impermanence can address sustainability if it leads to lower environmental impacts and less permanent goods, but also to increased engagement with objects. While desire for ownership of objects is a very human trait, having fewer material possessions can help to free us, to unburden us, of our 'wants'.

Disassembly also allows the incorporation of transience and durability. Designing an object with disassembly in mind means that component materials are more easily recycled, with less contamination from other materials. Design for Disassembly is a challenge to the throw-away culture. Paradoxically, objects will be designed to last, yet come apart easily for the transition to their next life within an endless cycle. Some corporations, including BMW, recognise the importance of disassembly. 'We have twenty different sorts of plastics in a typical car, five kinds

[70] Papanek, Victor 1995, p.246

would be better, three should be possible.'[71] These ideas are not new. The Citroen 2-CV, first built in 1939, is fixed together with bolts, not screws or glue, thus facilitating easier (self) maintenance. Self-assembly and disassembly can form part of the same process.[72] If an object is designed for self-assembly then disassembly will probably be easier also. Disassembly and reuse are different stages of the one cycle. As further described in Chapter 3, disassembly has been an important consideration in my practical research. Materials, processes and methods of connection need to be considered if the object is to be part of sustainable cycles, whether in the short or long term. Concepts of durability and ephemerality are also considered in my practical research. For example, when choosing a surface finish, it must provide a durable protective layer, yet allow maintenance if damaged. It must also not be harmful to the maker or user, and allow for the object to safely biodegrade at the end of its useful life. In acknowledging the many functions that objects are required to perform, we can design them to be durable or transient, (or both) according to the circumstances, while fulfilling demands of sustainability and emotional engagement.

Precious vs Mundane

The precious and the mundane are tied to flexible concepts of value and meaning in the context of culture, and are capable of being complimentary, not only oppositional. Just as the Memphis designers recognised that beauty, function and utility were not static, calculable quantities, but highly complex variables related to cultural conditions, so the notion of the *precious* can embrace a broad spectrum of themes. While the precious has traditionally been associated with notions of perfection and luxury it is not necessarily antithetical to the imperfect and the mundane. Objects can be considered precious because of their imperfections. The 'perfection' delivered by the technologies of endless mechanical repetition failed to deliver the human need for imperfection.

[71] BMW disassembly director Arno Eisenhofer in Papanek,V 1995, *The Green Imperative*, Thames and Hudson, London, p.240
[72] Papanek, V 1995, p.197

John Ruskin believed that a product could only be beautiful if it betrayed a human touch.[73] In Japan, imperfection is highly valued, recognising a yearning for things that are weathered and uneven, and bearing the mark of the maker. Imperfection allows room for a fluidity of meanings, unencumbered by the stasis of perfection.

The Italian designer *Gaetano Pesce* has for many years seen imperfection as a liberating concept, one that delivers individuality, in the face of standardization. In his designs such as those made from coloured resin, not only imperfection but also ugliness are seen as potential virtues. As he says, "today each object should be similar but not the same, like we are".[74] He also states that "If we can accept that even the imperfect is good then not only can we have originals instead of copies, but we can make things less expensive."[75] An allowance for imperfection could mean not only less waste but more engagement with objects. In the same way that Memphis designers projected new possibilities onto everyday objects through colour, pattern and material, designers today can bend negative qualities into positive ones, creating a new 'beauty'. Stuart Walker looks to notions of the *sacred* or *spiritual* in simple, mundane objects creating a new beauty. By exploring the intersection of two spheres of products – sacred artefacts made for spiritual contemplation and profane products that promote style and status – he looks to the point of integration with examples such as Shaker furniture and vernacular design.[76]

The banal and mundane have long been explored by artists and designers. Marcel Duchamp, by presenting everyday objects as fine art in the environment of the art gallery, extended the boundaries of art and sculpture. Le Corbusier displayed anonymous, factory-made products as 'objets-type', highlighting the beauty of non-decorative, functional objects. And in the 1960's, the Italian designer Achille Castiglioni

[73] Ramakers, R 2002 p.169
[74] McGuirk, J 2004, 'Gaetano Pesce', *Icon*, no.15, p.46
[75] McGuirk, J p.46
[76] Walker, S 2001, 'Beyond Aesthetics: Identity, religion and design', *The Design Journal*, vol.4, no.2, p.39

Fig. 6. Achille Castiglioni, *Toio Lamp* for Flos, 1962.

presented the 'Toio' Lamp, constructed using car headlights. As stated earlier, reusing objects that have already had a life can provide a mix of associations and meanings through interaction with the viewer. Of course, reuse does not always feature the mundane. In the current design trend of 'bootlegging', or *mis*use, existing 'High-Design' objects are reinterpreted, often in humorous ways. The Melbourne designer Scott Mitchell removed the interior workings of a Braun cigarette lighter designed by Dieter Rams, and installed new high frequency electronics to create a bat finder. Nor does the mundane have to be second hand. The use of plastic laminates in the work of the Memphis designers is an example. In both of these cases the intention is to enrich and expand the vocabulary, and experience, of design.

In exploring the mundane, designers are 'distancing themselves from simply creating beautiful forms and objects. They take their inspiration from what is meaningless, anonymous, everyday, neutral.' [77] The mundane can give us a connection to our past, which our system of rapid obsolescence and discontinuity rarely allows. This can help us to question the notion of newness and perfection and, through a kind of humour that recognition delivers, connect form to meaning in a tangible way. In my practical research work I utilize mundane, discarded materials with low perceived value and through (minor or major) interventions of design, re-value them, raising their monetary and emotional value. These materials may maintain the element of recognition, or be transformed, losing any reference to their previous life. It is through such interventions, considering function, material and form, that I aim to place these objects in the context of contemporary design. The reconciliation of the durable and the ephemeral, the precious and the mundane, give hints of a future that no longer deals in absolutes.

[77] Ramakers, R 2002 p.6

Chapter 2
Context: influential designers

Introduction

In this chapter I will be looking at the work of designers who have been influential in this research project. They have been selected for their concerns with exploring the task of constructing value in objects, and considering more sustainable approaches to designing, making and consuming. I will be analysing their work and approaches, some of which successfully integrate the two themes of sustainability and engagement with objects, some partially incorporating one or both of them. My intention is to demonstrate their relevance to the research project and in particular, the works in the final submission.

Designers

In 1993 a Dutch design collective named *Droog* ('dry') exhibited an eclectic collection of designs which merged a Calvinist minimalist aesthetic with a conceptual focus. They explored imperfection, informality, and a spareness of means. Natural processes, including decay, were included in their designs, and their materials and concepts were often humble, as Renny Ramakers states, 'the grand narratives have fallen silent. It is now the turn of lesser tales.'[78] There were of course predecessors to this style of design including the Des-in and Pentagon groups in Germany in the '70s and '80s.

These groups, along with Droog, were searching for a more substantial conceptual and ecological base on which to make objects. 'Our superficial product culture could do with a little more soul: more involvement, more meaning, more substance.'[79] While

Fig. 7. Des-in, *Car tyre couch*, 1975.

[78] Ramakers, R 2002 p.10
[79] Ramakers, R 2002 p.11

the designers who exhibited with Droog often incorporated simple construction, natural materials and reuse, ecological awareness was less a structured theme and more the by-product of their makeshift approach. There were, however, in later projects, examples where they successfully united sustainable approaches with a consideration of meaning and engagement in objects.

Marcel Wanders was an early collaborator with Droog. In his *Knotted chair* (1996) he utilised a traditional knotting technique with a high-tech fibre braid, slung into a chair form, then dipped in epoxy resin. The resulting chair is strong, light, innovative and highly engaging due to its unexpected use of traditional craft techniques. However, as a sustainable product it falls short, as both the fibre braid and epoxy resin have associated health risks, and cannot be recycled. In the Oranienbaum project (1999), for an economically depressed region of eastern Germany, he designed disposable, compostable cutlery from local, fast growing poplar trees. In this project he successfully united sustainable approaches with a sense of meaning and engagement. Not only was the product ecologically sound it also engaged emotionally, by reinforcing local identity and tying the user to their experience of the region. It also resulted in an economically successful product. This is an example where meaning and engagement, and sustainable approaches, are not only compatible but mutually beneficial. In the best of Droog Design, Less and More really do come together.

Fig. 8. Reinhard Muller, *Air Shelf Unit,* 1987.

Fig. 9. Marcel Wanders, *Knotted Chair,* 1996.

Fig. 10. Marcel Wanders, *Disposable Cutlery and bowl,* 1999.

Marcel Wanders has incorporated humour, material, function and the unexpected into successful products. In his designs for Droog, his approach to form and material has been more expressive and sophisticated than some of the other Droog collaborators, whose aesthetic was allied more to that of *art povera*. In regard to the Droog collection, he has said that the focus on the conceptual can lead to a lack of "sensitivity and ambience".[80] His example shows that a consideration of form is still vital for the success of a design. I share with Wanders a desire to create objects capable of bonding with users. My motivation is also to ensure the objects achieve a neutral, or even positive environmental impact. In some of his projects, Wanders has demonstrated that this is possible, in designing objects that are not only engaging, but economically and environmentally sustainable. Wanders work differs from mine in its theatricality and diversity of styles. His designs reflect a consistency of approach rather than of form.

Since his early collaborations with Droog, Wanders has successfully expanded and adapted his approach, to reach a broader audience. He stresses the importance of continuing to develop 'mature, realistic industrial projects' beyond just prototypes, and the need to reach a lot of people.[81] He aims in his work to explore 'the zone between individuality and mass production.'[82] The designs I am developing in this project, while not intended for high volume, are aimed at production rather than as one-offs, to reach a broader audience. I believe that one environmentally-designed object is not as positive as many. The more that are produced the better the chance of influencing the perceptions and habits of designers and consumers.

Hella Jongerius is a Dutch designer who also exhibited with Droog Design in the early 1990's, initially in the Netherlands, and later in Milan, Italy. She shares with other Dutch designers a desire to explore

[80] van Zijl, I 1997, *Droog Design 91-96*, Centraal Museum, Utrecht, p.129
[81] van Zijl, I p.129
[82] www.designboom.com, 2005

the making, materials and meaning of everyday objects. She mixes craft techniques with the industrial, and traditional themes with the contemporary. Trial and error with materials and processes bring new possibilities and unexpected concepts. She consciously pushes the properties of materials, not to deliver perfect aesthetic forms (often utilizing existing materials and forms) but to find new stories to tell. She pursues imperfection in the trace of the maker's hand and recognises the ability of decoration and techniques of care to construct individual meanings.

It is through her reinvigorating of handcrafts, or techniques of recognition, that she aims to deliver meaning and involvement to users of her designs, to offer them 'every scope to attach their own fond and strictly personal memories to everyday objects.'[83] She explores the points of intersection between functional objects and autonomous vehicles of meaning, almost (but not quite) released from practical utility. Her approach to materials then, is primarily intended to create meanings through unexpected allegiances, and any consideration of sustainability would be from a cultural rather than an ecological viewpoint. A good example is the *Kasese chair* which Jongerius designed in 1999, based on a wooden chair she saw in Africa. Her version however used carbon fibre for the frame and felt for the seat. A comparison of Embodied energy values[84] of these materials show that while wood (2-8) and felt (4-10) rate low, carbon fibre has a very high rating (800-1000) [85].

Fig. 11. Hella Jongerius, *Kasese Chair*, 1999.

While the concept behind the design is her primary consideration, it would be hard to justify this material selection on environmental

[83] Schouwenberg, L 2003, 'For the Love of Things', *Hella Jongerius*, Phaidon, London (no page numbers)

[84] Embodied energy is a means of assessing environmental impact of materials over the life of that material and measures the total energy stored, including energy in the raw materials, transport and manufacturing - the lower the value, the lower the environmental impact.

[85] Fuad-Luke, A 2002, *The Eco-design Handbook*, Thames and Hudson, London, p. 277

Fig. 12. Hella Jongerius, *Repeat* Fabric designs, for Maharam, 2002.

grounds, and shows an ambivalence shared by many designers to the real impacts of their products. I would argue that a designer needs to consider all aspects of their practice, to produce objects that are totally beautiful, with no 'hidden ugliness'.[86] The work of Hella Jongerius does however address reuse and recycling. While overtly environmental themes aren't of concern to her, she practices a form of cultural recycling, using old forms and old traditions. Her approach is described as creating 'strange marriages that united old family members without stripping them of their individuality.'[87] In a project for the fabric manufacturer Maharam (2002), she reused previous patterns from their archive, along with perforations from punched loom cards and numbers and codes from the manufacturing process. In addition, by designing the pattern with a long (3 metre) repeat, several pieces of furniture can be upholstered from the one piece, with none sharing an identical pattern.

In her essay "For the Love of things" Louise Schouwenberg describes how everyday objects in past eras were seen as vessels for absorbing secrets, feelings and memories. She states that due to changes in mobility and the pace of technological developments, objects are rarely allowed this privileged position. (The Nokia mobile phone may have replaced the aged glass vase as an object of attachment, but it probably won't become an heirloom). She writes 'with the rise of the consumer society, not only did the durable value of the utilitarian object disappear, but the story we can link to them became short-lived and general.'[88] She argues that it is, paradoxically, material contact and sensory experience of tangible objects that can deliver the immaterial qualities no longer provided by fleeting, superficial objects of appearance.

Through her experiments with craft and materials, Hella Jongerius transfers to existing forms unexpected qualities. In her *Soft Vase* (1994-

[86] Datschefski, E 2001, *The Total Beauty of Sustainable Products*, Rotovision, Crans-Pres-Celigny, p.16
[87] Schouwenberg, L 2002, 'Lost and Found', *Frame*, no.28, p.50
[88] Schouwenberg, L 2003, 'For the Love of Things', *Hella Jongerius*, Phaidon, London

Fig. 13. Hella Jongerius, *Soft Vase*, 1994-99, polyurethane.

99) she uses an archetypal vase form but moulds it in soft polyurethane, incorporating the rough, texture of aged stone. She thus, with an economy of means, gives new meanings to old forms. Imperfection, aging, materials and memories are explored in an object with low material value but potentially high immaterial value. Notions of perfection and imperfection are also explored by Hella Jongerius in her "Slightly Damaged dinner service" (1998), where a lot of time and effort was put into realising imperfections in her ceramic plates. In these industrially produced objects, she aims to recreate the individuality of the unique, handmade object, to encourage an attachment not easily achieved in identical, 'perfect' products.

Fig. 14. Hella Jongerius, *Slightly Damaged Dinner Service*, for Royal Tichelaar Makkum.

The work of Hella Jongerius is linked to mine through her approaches as much as her materials and forms. Like Jongerius, I explore and encourage the sense of touch, and the unexpected use of materials. Through reuse of materials, I am also interested in how memory and recognition can play an important role in the designing of objects that engage the viewer. Jongerius's interest in exploiting imperfection parallels to a degree my use of mundane, reused materials. I think we both also recognise the need to balance this by achieving an overall high degree of making skills appropriate to the context in which the object will be placed. I think we differ somewhat in our approaches to function. Her conceptual concerns and experiments with materials can, at times, be at the expense of function, whereas my approach in this project is to foreground function. We also differ in our approaches to form. Whereas she freely utilizes a range of existing forms or "archetypes", in this project I am developing a personal vocabulary of simple, repeated, often circular, forms. While Jongerius shares the ambivalence of many designers to the real impacts of their products, she interrogates current design ideologies to find more engagement with our surroundings. This interrogative approach can question aspects of our relationship to objects

around us, highlighting the emotional costs of our system of waste, obsolescence and disposability while delivering simple yet unexpected results.

Tejo Remy Like Wanders and Jongerius, Tejo Remy is a Dutch designer who became well known through his collaboration with Droog Design in the early 1990s. His *Chest of Drawers* (1991) is perhaps the most famous of the Droog 'products'. It is essentially a pile of second-hand drawers bound together by a single heavy strap of a kind used in the transporting of goods. In his chest he showed that utilizing everyday objects can, through simple interventions, question our assumptions of beauty and imperfection, production and overconsumption, form and the formless.[89] Likewise an important practical and conceptual consideration in my designs has been the creation of a sense of value in a product made of reused materials that often have low perceived value. Simply putting together old, low value materials in new ways will not guarantee new status or value. Remy resolved this by packing every found drawer in a well-crafted container of Maplewood. This gave the finished object a visual consistency that would be maintained even if the arrangement of drawers was changed (as user interaction was one of Remy's intentions for the object).

Fig. 15. Tejo Remy, *Chest of Drawers*, 1991.

Constantin and Laurene Leon Boym are a couple based in New York whose designs incorporate reuse and express an interest in humble materials. Like Hella Jongerius they look for unlikely juxtapositions, but not to explore the richness of materials, rather to investigate how these can change our readings of familiarity. In their

Fig. 16. Constantin and Laurene Leon Boym, *Vase*, from Recycle project, 1988.

[89]Ramakers, R 2002 p.158

early *Recycle* project (1988) they used discarded, everyday items like detergent bottles and framed them 'to estrange the objects from their conventional contexts'[90] and highlight a new function. Their later *Strap furniture* was a response to the discarded packaging materials on the streets of the Meat Market district in New York City where their studio was located. Their use of locally-sourced reused materials connects these works with mine. Their active searching for, and incorporation of, alternatives to new materials also promotes 'transient durability', a means of continuation. This attitude recognises that contemporary products of design can also be the raw material of future remanufacture, delivering 'a new class of products capable of physical if not psychological transformation.'[91] Through their work the Boyms question why designers need to build everything from scratch, when there is plenty already made; and demonstrate how rearranging culturally familiar yet unappreciated items can bring about a new beauty, casting new light on the familiar.

Fig.17. Constantin and Laurene Leon Boym, *Strap Chair,* 1996.

In the early 1990's, they worked on a project that typified their approach of embracing the mundane. As an immigrant from Russia, Constantin viewed American culture as a curious outsider, while Laurene as an American female designer, was an insider yet also an outsider. *Sears style* developed out of their desire to explore American culture for its creative, untapped potential for meaning. Sears, Roebuck and Co. was an American institution that sold furniture and homewares nationally through their comprehensive catalogue. While it had been embraced by Americans for its dependable, practical items for the home, gradually 'Sears became associated with symbols of a different kind: those of kitsch, banality and suburbia'. 'With the Searstyle

Fig.18. Constantin and Laurene Leon Boym, *Searstyle chair and foot rest,* 1993.

[90] Boym, C, Hall, P & Scov Holt, S 2002, *Curious Boym*, Princeton Architectural Press, New York, p. 24
[91] Scov Holt, S 2002, 'Ten Thoughts on Two people in One Studio', in Boym, C, Hall, P & Scov Holt, *Curious Boym*, Princeton Architectural Press, New York, p. 108

project' wrote the Boyms, 'we attempted to bring this long-ignored American visual language back into contemporary design.'[92] They selected and ordered components from the catalogue such as seats, backs and frames and assembled them to create new, yet familiar, compositions. The work of the Boyms differs from mine in their approach to forms and aesthetics. Their finished items often utilize an archetypal chair or table form while superimposing unexpected or outmoded cultural forms. In the case of the Searstyle project they utilised a collage approach. As stated above, I am developing a personal vocabulary of simple, repeated, often circular, forms attempting to extend, not rely on, existing archetypes. However, it is the Boym's focus on recognition and familiarity in both the mundane and reused that links them, I believe, to my project.

Humberto and Fernando Campana from Sao Paolo, Brazil, are perhaps the best known designers utilizing found materials. Like the Boyms, they draw their inspiration from their surroundings, often using mundane materials. They started by making chairs and screens using laminated cardboard fitted to frames of steel rod (1995), combining a reductive modernist aesthetic with craft techniques. There is an important local element to their practice in their concepts and materials. Their *Favela chair* (2003), made up of an accumulation of multiple layered small blocks of wood takes its reference from the handmade, and often makeshift, structures found in the poor areas of Brazilian cities. In their designs they are, according to Francesca Picchi, 'attempting to contrast the antiseptic rigour of functionalism with the poetic potential of error.'[93] Paradoxically, a number of their designs, including the Favela chair, are now

Fig. 19. Humberto and Fernando Campana, *Cardboard Screen*, 1995.

Fig. 20. Humberto and Fernando Campana, *Favela Chair, 2003.*

[92]Boym, C, Hall, P & Scov Holt p.28
[93] Picchi, F 2003 'Redeemed by Imperfection', *Domus*, no.860, p.88

manufactured in Italy using industrial production techniques thus somewhat compromising the local, sustainable aspects reducing them to little more than symbols. What had previously been constructed with offcuts, are now presumably made with virgin timber.[94] While the spontaneity and imperfection in their designs undoubtedly provide emotional engagement, some of the potential for depth and specificity of cultural context are inevitably lost when transferred to a global design template. However, as the chairs are made in low volumes and to high quality, they should be durable and potentially collectable, giving them a long lifespan. The Campanas are important in my project as early examples of the integration of forms of reuse (if only symbolically) with mainstream contemporary design. Their exposure in the media has brought forward new possibilities for designing and making.

Matthew Butler has developed the *Zaishu* project in which he considers sustainable approaches and engagement with users in a seamless, integrated way. He invites other designers to print designs onto discarded structural, and/or plantation-grown, plywood. He then cuts out, using a template, interlocking pieces that slot together to form a simple 5 sided seat/table/box. The regular nature of the templates means that the different patterned pieces can be slotted together allowing interesting and unexpected juxtapositions of pattern, colour and texture. Seen as a social process rather than a finished product he says that 'assembling a Zaishu is visually intriguing and invites social interaction.'[95] In addition, being in flat pack form allows lower freight and pollution costs, while creating a precious object from non-precious, robust materials challenges the notion of the polished, easily damaged design object.

Fig. 21. Matthew Butler, *Zaishu* in Milan, 2005.

[94] The manufacture, Edra, describes the chair on their website as made from "many pieces of natural wood similar to those with which the shacks of the favelas or shanty towns in Brazil are built". 2005, www.edra.com/product.asp?l=en&prod=favela

[95] www.zaishu.com, 2005

I see Matthew Butler's relevance to my project in his ability to not only unite the two key themes - sustainability and engagement - but in producing a functional, marketable product. Through innovative thinking incorporating ethical, environmental and social considerations, it is possible to create the type of product that Stuart Walker refers to in "The Manifestation of Meaning", products that adhere to sustainable principles. Other similarities between Butler's work and mine include a consideration of social interaction, for example in the potential of the Video Screen (as discussed in Chapter 3), for users to display personal items or to decorate as they please. The consideration of easy assembly and disassembly also links Butler's work to mine, however he is concerned more with the user of the product while I consider the potential future user of the materials.

Esther Nunn is a Tasmanian artist who, since the early 1990's, has transformed discarded lounge chairs and bedspreads into objects of wonder and engagement. She joins discarded or second-hand knitted toys, by sewing them to the object, completely covering it while still allowing its form to show through. Many of the toys are old and worn so immediately have a connection to memories of childhood. By sitting in, on or under her creations, one is engulfed by texture, colour and recognition, whether as an adult or a child. One is also made aware, through the volume of accumulation, how many old yet still 'loving' toys are discarded. In comparison to the Campanas, her work is more functional art than expressive design, and has closer links in its production to time, handcraft and context. While her work is very different to mine in form and material we share similar aims, of unifying sustainable approaches and a sense of engagement with objects, transforming the existing rather than adding to resource consumption.

Fig. 22. Esther Nunn, *Golly Chair*, 2001.

Paolo Ulian is an Italian designer who focuses on environmental and ethical considerations through innovative design. He incorporates transformation in his work, enabling it to perform multiple functions. His *Cabriolet* (2001) is a low table with a flexible top that can be raised and supported from one side. This becomes a back rest for seating, and provides storage in the space underneath. Through novel ideas executed simply, he considers both sustainable approaches and engagement for the user. Paolo Ulian is one of the few well-known designers for whom ethical and environmental considerations are central. Initially he began producing objects from waste materials from Italian marble processing (an industry which wastes 30% of its raw materials[96]) recognising discarded material as a potential resource for usable, artistic products. He found that the material, discarded through the process of manufacture, often displayed beautiful forms and a high degree of finish. As he described in *Domus* 'what I have called "scrap" is a piece having pure form and very special character.'[97] He designed a series of small objects including fruit bowls, pencil holders and lamps exploiting this potential through creative intervention, often requiring only minor 'reprocessing'. Of his designs he says that he tries 'to merge ethical and psychological requirements.'[98] He goes on to say that 'the ecological aspect is only one factor that can contribute to creating added value. That's why I always try to introduce some other elements in my work such as invention and poetry.'[99] An example of this approach is his *Seaside Slipper Print* produced by Sensi in 2001, which also incorporates the quality of impermanence. The soles of the slippers, an Italian version of the Australian Thong, have phrases

Fig. 23. Paolo Ulian, *Cabriolet* seat/ bench, 2000.

Fig. 24. Paolo Ulian, *Marble Bowl*, 1993.

[96] Romanelli, M 1993, 'Paolo Ulian' Domus, No.745, p.10
[97] Romanelli, M 1993, p.10
[98] 'The creative Amazement: Interview with Paolo Ulian', viewed 2005 IdeaMagazine.net, www.ideamagazine.net/en/cont/cm0900a.htm
[99] 'The creative Amazement: Interview with Paolo Ulian', IdeaMagazine.net, 2005

printed upside down in relief, allowing a simple message ("who loves me follows me") to be printed into sand or soft ground wherever one walks.

Paolo Ulian is relevant to my project for a number of reasons. Through his work utilizing discarded marble, he recognised a number of important factors in successfully integrating reuse into his design practice. These included: the need for regularity of form and size of the reused material, the ability to produce the designed objects in volumes, and an ongoing supply of the raw material. He also utilizes simple forms with minimal reprocessing to enable/improve the economic viability of the production. Also, by using marble, he exploits a material with a high perceived value. He also considers issues of precious/mundane and durable/ephemeral. In his design of a table lamp *Palombella* (2000) he used a silicon rubber swimming cap, stretched over a simple wire and steel frame, to act as an effective diffuser. His design dismantled easily, allowing for reuse or recycling of the components. In recognising the properties of an everyday object, he challenged the accepted need for purpose built 'new' components. Also, by transforming it for a new purpose, its previous function was no longer apparent. His design approach, from the beginning to the end of each project, considers the ethical, social and environmental alongside function and aesthetics. In all of his designs he utilizes an approach of simplicity in form, material and narrative, which I am exploring in the practical research for this project. He recognises the importance of designing a marketable range of products whether in limited edition or higher volume, potentially educating consumers towards more responsible buying decisions, thus integrating more sustainable approaches into the context of contemporary design.

Fig. 25. Paolo Ulian, *Palombella* table lamp, 2000.

Chapter 3
Repetition and recognition: development of the practical research

Introduction

In this chapter I will focus on the practical research and describe how the project developed over the course of study, including approaches and techniques used, and successes and failures. It will include a discussion of each of the works in the final submission. I will discuss products and materials, forms, techniques and functions explored during the research project, and relate these to the central argument. I will approach this chapter chronologically, to follow the development of the designing and

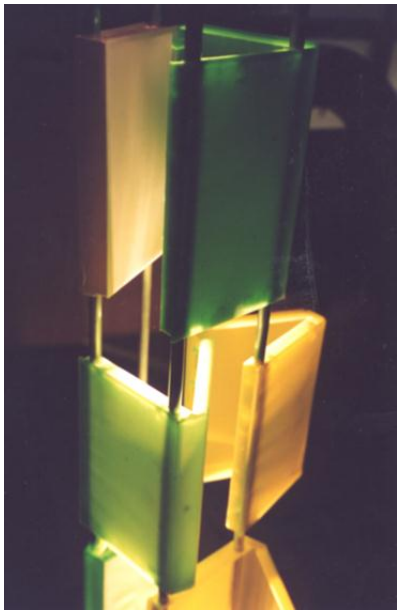
making. My initial intention was to approach the project with an open mind, using the central argument as a point of referral and to experiment with materials and forms. It was my intention to develop a range of objects, each a manifestation of aspects of sustainability and attachment of meaning to objects. My intention was to: experiment with moulded forms from recycled plastic, investigate waste streams from local industries, utilize newly developed sustainable materials, or develop my own materials. I first began by exploring materials I had at hand from working at the TipShop, while researching value and emotional attachment in objects and sustainable approaches to design

Video screen

Using a collection of discarded coloured VHS video cases that I had previously used in a light installation, I designed a simple, articulated screen. I overlapped the video cases in a simple brickwork pattern, using 2 metre lengths of 12 mm aluminium tube to structurally act as vertical 'pins', to form hinges, not unlike some security screens. It also shared similarities to a screen designed by Eileen Grey in 1923. My screen however was not of lacquered wood, but discarded plastic boxes. By experimenting with hole positions in the tops and bottoms of the cases, I found a good distance that allowed free articulation while giving some degree of privacy, a balance between positive and negative space. It was a very simple design, both visually and structurally, allowing the possibility of assembly by the customer, and was simple to package and post. Through the influence of Victor Papanek's book *Design for the Real World*, where he promoted concepts like disassembly, DIY and minimising material use, I felt this design fulfilled all of these requirements. As video cases are commonly owned objects I even thought I could minimize the design to just the hole template, allowing people to build their own screen.

Previous screens I have designed performed several functions such as privacy, illumination and sound insulation. The Videoscreen also can be multi-functional. As all the cases can still open and close, it provides storage and display functions. If clear cases were available they could be used to display personal items of meaning or significance such as photos, objects, or poems. As the

Fig. 26. *L'ambiente* Screen, 2001.



cases often have a plastic sleeve around them, repeated patterns, colours and images could be inserted, each screen decorated as the owner pleases. I also explored the possibility of illumination. Being easily

Fig. 27. *Video case screen* (work-in-progress), 2004.

assembled, they could also be disassembled, allowing reuse or recycling of the two materials. As they only had minor changes made to them, the cases could return to their previous use while the aluminium tubes were long enough to still have many uses. Due to rapidly developing digital technology, there could potentially be a future ongoing supply of VHS cases.

Fig. 28. ***Video Screen*** **2004.**

The problem I struck was primarily one of current material availability. Video cases, particularly in volume or consistent size, are not regularly discarded at the tip. I approached video libraries and retailers, but they usually only throw them away when damaged. I have realized through the development of this project that material availability and condition are vital considerations when designing with reused materials. This aspect is further described in the conclusion. I also contacted a number of plastic manufacturers and found a supplier of new, clear cases. This however seemed at odds with the purpose of the project of finding alternatives to the continual consumption of resources. My intention is to design functional, marketable objects utilizing more sustainable approaches, so finding a regular supply is important rather than falling back on using new materials. As I describe in the conclusion, materials of short term supply can be utilized in one-off items, but these need to be of high perceived value and the object has to have a sophistication in design and construction that will allow a higher price to be charged. For a design to be sustainable, consideration needs to be made of its economic viability, so it can continue to be a sustainable alternative. It was not until later in my project that I recognised the importance of these considerations. In addition to this, the Video screen does not relate visually to the later pieces. It was for these reasons that Video screen was not included in the final exhibition but as support material.

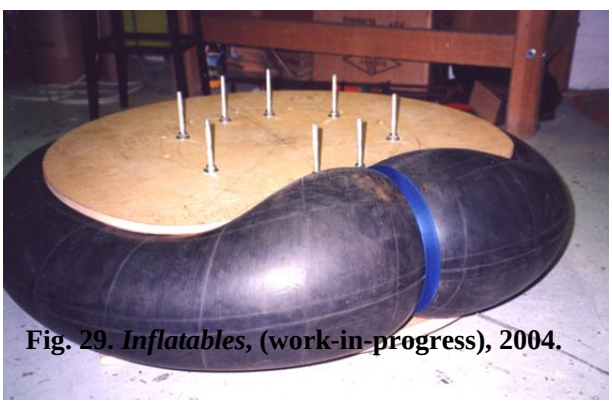


Fig. 29. ***Inflatables,*** **(work-in-progress), 2004.**

Inflatables

I began sketching ideas for simple furniture

from cheap materials, influenced by the makeshift nature of the early work exhibited by Droog. I thought of using an inner tube to form the back of a 'lounge chair' through which a protruding roll of carpet could form a seat. I was pursuing a simple modular approach or 'additive principle'[100] (while also being influenced by the volume of carpet salvaged at the Tipshop) and combined the idea of utilizing inflated inner tubes with another idea for a low, round table. Compressing an inflated inner tube between plywood discs with areas cut out, would allow bulges to protrude. These bulges could perform different functions such as seating, footrests or simply arm rests when sitting on the floor. I initially used straps to hold the inner tube in compression, however I replaced these with threaded rods which would be less obtrusive, and utilized the hole in the middle. I cut out a number of discs and tried different cut-out shapes with different sized inner tubes. The tubes, when not confined inside a tyre, can expand greatly but can split if inflated too much. In my experiments I found I could inflate the tube to get the desired resistance without over-inflating. Through my experiments I found the most success with simple forms, echoing the circle of the inner tube in various ways, and focusing on one design element per table, rather than several. This approach was continued in later projects.

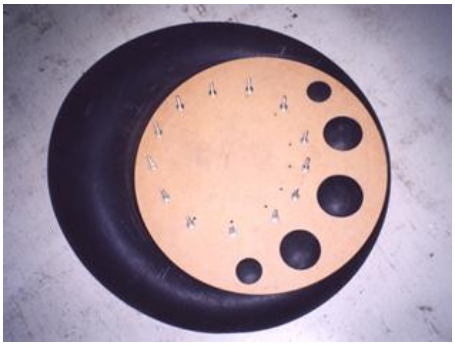
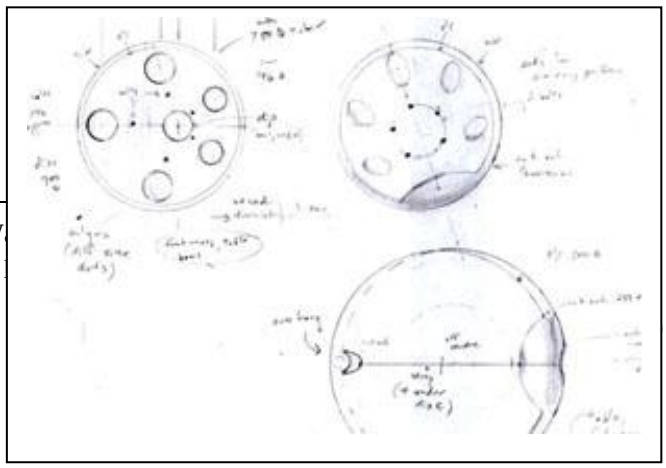


Fig. 30. ***Inflatables*****, (work-in-progress), 2004. Fig. 31.** ***Inflatable 1,*** **2005.**



[100] Albus, V, Bach, M &W
exhibition catalogue, IFA,

My first successful Inflatable prototype has five circular cut-outs in a star pattern within the circular shape of the top. They function essentially as decorative, tactile elements. A sixth central hole contains a small bowl, echoing in reverse the outward bulges of the other holes, providing a place for snacks, fruit or a candle.

The second finished Inflatable is slightly larger and, being higher, more suited to function as a low seat/table. The three circular cut-outs intersect the edge of the top disc allowing the inner tube to bulge at the edge of, and above, the table surface. While I had intended to include holes for storage in the centre, keeping the design simple proved, I believe, to be a good strategy. At this point I was trying to find better alternatives to conventional MDF for the tops and bottoms of the Inflatables. MDF, as described in Chapter 1, is made with wood pulp and Urea Formaldehyde glue binder. I contacted a website called EcoSpecifier, a user-pays site with a database of eco-friendly materials and products for advice. Low Formaldehyde MDF is unfortunately only available in Australia in large packs. (The Australian manufacturer primarily sells to Japan who, like Europe, have stricter health regulations than Australia).

Fig. 32. *Inflatables*, sketches, 2004.

Fig. 33. *Inflatable 2*, 2005.

I had planned in my project to research and utilize "waste-streams" from local industries. Through my job at the TipShop I had met Clinton

Luckock, a recycling consultant for Cadbury/Schweppes at Claremont who I contacted to see if I could obtain materials not currently recycled or reused by the company. He showed me the processes in place for recycling at the factory and a range of materials, mostly packaging, that I could explore within my project. These included: 5mm plywood sheets used as packaging for the blocks of raw cocoa; 3mm Masonite sheets used for transporting rolls of aluminium foil (used to wrap the chocolate blocks); aluminium and PVC tubes from the centres of the rolls of aluminium foil, and cardboard tubes.

Fig. 34. *Inflatables*, (work-in-progress), 2005, reused Cadbury packaging ply.

It was after this visit that I realised that, by laminating four sheets of the Cadbury packaging plywood together, I could have a safer alternative material for the tops and bases of the Inflatables. The plywood was finished using a burnishing Tung oil, and a beeswax and citrus oil polish. This type of surface finish provides a durable protective layer, yet allows maintenance if damaged, promoting a patina of use. It is also not harmful to the maker or user, and allows for the object to safely biodegrade at the end of its useful life. My visit to Cadbury became important for two other reasons: it was a local, ongoing supply of 'raw' material that I could utilize in the development of practical, producable objects, and it represented a change towards a broader definition of reuse, utilizing more generic, *less identifiable* material.

The issue of punctures was raised, which ties in with themes of durability and the ephemeral. As is clear from viewing and using the Inflatables, the materials (inner tubes) have fulfilled a previous use and now, by patching, cleaning and polishing, are able to be used for a new purpose. If punctured they can be simply repaired using bicycle patches and reinflated. This can be repeated many times. I believe the Inflatables address functional durability while also recognising the transitional nature of objects. Over time the rubber may gradually fade and perish if exposed to strong light. At this point the table can be easily disassembled

and the inner tube reused for other purposes, or shredded for uses such as surfacing of outdoor playgrounds.

Issues of balancing practical durability with personal engagement were brought into focus when I exhibited the first two Inflatables in March 2005 at the annual DOT[101] members exhibition at Mawsons Place, Hobart. The tables were very well received by other designers, retailers, and the general public, especially children. The sense of touch, simple construction and design, new approaches to function, and the unexpected use of material all contributed to a strong engagement with the objects. Being mounted on castors also added an element of fun, aligning them (for me) with dodgem cars, donuts and hovercraft. I exhibited three Inflatables at CAST gallery in October 2005 as part of the exhibition *Home Again* curated by Peter Hughes, from TMAG.

Fig. 35. *Home Again,* exhibition, CAST Gallery, Hobart, 2005.

Hughes's idea was to display craft and design objects that were intended for use in the home, rather than ones that functioned purely as 'exhibition' pieces. I was pleased to be selected for this reason as this was my aim for the Inflatables. Once again, there was a very positive reaction to them,

[101] DOT (Designed Objects Tasmania Inc.) is the new name for Designer Makers Tasmania Coop. Soc. Ltd. of which I have been a member since 1985.

especially from children, and I was happy how well they sat within the context of other contemporary design and craft objects. I feel the Inflatables successfully address the issues of mundane vs precious, challenging our assumptions of value in objects, beyond the purely functional and economic, responding to our need for associative and tactile qualities.

From designing, making and exhibiting the Inflatables, I came to realise that issues of durability should be considered in the context of each object, and that durability does not mean every object must last forever. A flexible (or inflatable) approach that considers durability in the context of transience can be just as sustainable if it results in personal engagement with the object, and a consideration of cycles of materials. Due to their simple design, the Inflatables have the potential to be produced in quantities greater than small batches; as in Matthew Butler's *Zaishu* project, they can utilize whatever sustainable plywood is available, whether reuse packaging or plantation-grown, a CAD program would allow the use of a CNC router to cut out the shapes from the plywood, while discarded inner tubes are commonly available.

In the article "Designing with Air", Francesca Picchi writes 'pneumatic goods have the power to summarize a free idea of living, based on weightless, mobile, ephemeral things, the fruit of a 'light' technology, within easy reach and easily self-producible.'[102] The UK design group Inflate, who reinvigorated inflatable designs in the 1990's believe, 'design is about creatively exploiting constraint.' They aim 'to continue selling surprise at no extra cost.'[103] The nature of this design allows for flatter (therefore cheaper and less polluting) packaging and for the new owner, an element of discovery as they inflate their 'new' furniture. [104]

[102] Picchi, F 1997, 'Designing with Air', *Domus* 794, p.72
[103] Fiell, C. & Fiell, P (eds), *Design for the 21st Century*, Taschen, 2003, p.82
[104]The environmental consideration of simplicity in design is explored by Ida van Zijl in *Droog Design 91-96* who, in regard to Dutch designer Ed Annink, refers to the concepts of "ease of manufacture and assembly…simple forms which require virtually no assembly. The less energy expended on a good product, the better". p.19

4-track CD storage

I was interested in developing a wall-mounted storage system for audio compact discs. Influenced by designs by Ron Arad, including; *The Bookworm* [105] (for Kartell in 1994), *The RTW* (Kartell, 1996), *The Soundtrack* (for Alessi, 1998), and *Magazine Rack* (Kartell, 1998), I wanted to explore the possibility of a curved, modular wall system of storage, rather than the more usual horizontal format.

I sought to utilize identical component sections that would allow, through simple assembly/fabrication, a range of interlocking circular forms. After finding some discarded "Scalextric" slot car track on the Tip I realised it already existed. It was at this point that I identified a recurring element in my project - circular forms. From an initial focus on materials has developed a particular aesthetic of repeated circular forms and simplicity. While my intention had been to eschew any overriding aesthetic framework, as the practical research developed, my approach to designing meant that certain forms were foregrounded. The gradual recognition of this allowed a developing cohesion to the practical work. This aesthetic 'structure' also provided, at the early stages of the design process, another point of reference, along with considerations of material, supply, function and construction. These all coalesced to determine the success or otherwise of each design proposition. The issue of form in contemporary design is discussed by Renny Ramakers in the book *Less and More* where she states that designers are; 'distancing themselves from simply creating beautiful forms and objects. They take their inspiration from what is meaningless, anonymous, everyday, neutral.'[106] She continues:

***ookWorm* shelving for**

[105] Later in 2005 I actually found a complete *Bookworm* on the tip. This highlights again the need for more sustainable systems to be developed that actually encourage recycling and reuse. Objects such as *The Bookworm* are manufactured with recycling in mind, yet are so easily disposed of and wasted. Take-back schemes are becoming common in Europe where producers take responsibility for their products beyond the point of sale.

[106] Ramakers, R. 2002,*Less & More: Droog Design in Context*, 010, Rotterdam, p.6

> but just as functionalism turned out in retrospect to possess clear aesthetic aspirations, so too the products spawned by the mentality outlined above prove to have more 'will to form' at their basis than the underlying premises suggest. [107]

With a collection of identical corner pieces (each one eighth of a circle) I experimented with interlinking circles, figure eight and looping shapes.

Fig. 37. *4-track* CD storage, (work-in-progress), 2005.

The dual slots in the slot car track, I realised, provided the means of attaching the cds. I experimented with magnets, wire and Velcro and also decided a backing of Plywood could give a simple structure. I designed a way that interlocking circles could form continuous lines or 3 or 5 point shapes. These provoked for me references that were far from the source material, such as Islamic patterns.

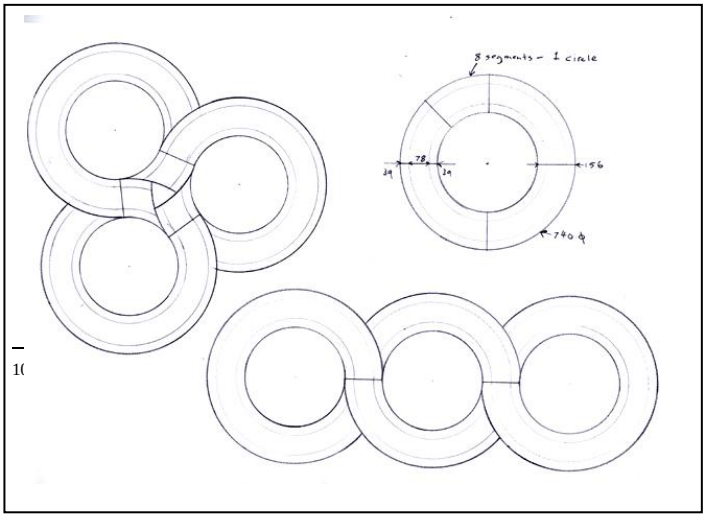


Fig. 38. *4-track* CD storage, sketches, 2005

Fig. 39. *4-track* CD storage, (work-in-progress), 2005.

My design also allowed for disassembly and reuse of the track segments. In reusing materials I aim to make as few changes as possible to allow for future use, in this case to return to the original purpose of racing slot cars.

The problems I faced in this project were similar to those of the Video Screen. These related to the question of the ongoing availability of the materials and to the sophistication of the design. Was it, as one person described, similar to a one-line joke? I did not want the material's reuse to be the primary visual aspect of all the projects, but wanted to explore subtler aspects, where the source materials were not always recognisable. While I felt the design was successful on one level, it did not have the potential to achieve the expectations that I developed as the research project unfolded. This was achieved more successfully in the projects that followed. Even though I was not entirely satisfied with the *4-track*, and have not included it in the final exhibition, I felt it was crucial in the development of subsequent work and the project as a whole.

Tubescreen

Early in 2005, I made a work for the exhibition *Different Readings* for the Allport Museum, at the State Library in Hobart. The idea of "Different Readings" was for selected Tasmanian designers to interpret, from a contemporary perspective, one piece from the historical collection of the Museum. I chose a folding leather screen (c.1890) which was painted with exotic scenes. I was drawn initially to the utopian pictorial representations, and the idea of furniture as an expression of the owners self perceptions. I initially experimented using the

Fig. 40. *Screen*, c.1890, Allport Collection.

cardboard, plastic and aluminium tubes obtained from Cadbury.

Fig. 41. *Tubescreen,* (work-in-progress), 2005.

Standing narrow cardboard tubes in a row I slid wider tubes over each of them, vertically stacking tubes of different materials. I attached imagery related to the original screen to the outer tubes and, by allowing them to rotate, produced varying impressions, including reflections and distortions in the aluminium tubes. I was exploring concepts of display and concealment. In these early experiments I was considering both engagement with the viewer but also the ease with which the object could be later disassembled, cardboard and aluminium both being recyclable. In the vertical nature of the design I was also exploring references to bamboo structures.

Fig. 42. *Tubescreen,* (work-in-progress), 2005.

While I felt the concepts I was exploring were interesting, the visual design was far less successful. Multiple vertical rows of tubes gave the piece a heavy, laboured feel. With the help of my partner Jessica, I redesigned the screen, achieving a simpler, subtle yet more expressive and open feel by realigning the tubes horizontally, highlighting their end-on profile. The redesign still allows rotation of the tubes, but on vertical axes of 10 mm aluminium tubes, and exposes and reinforces the display of their circularity as a repetitive visual link. I no longer used cardboard but a

mixture of 82mm aluminium and PVC tubes. The tubes were available from Cadbury at lengths of 250mm, which were cut to 32mm lengths.

Fig. 43. Jig for cutting PVC tubes, on circular saw, 2005.

I also used a special drill bit and jig to accurately drill all the holes for the vertical tubes to pass through. A lot of time was spent by myself and Jessica in sanding, cleaning and finishing the 300 individual tube pieces. The finished design was made of five identical panels, each articulated by interlinked aluminium flat bar at the top and bottom.

Fig. 44. *Tubescreen*, (detail), 2005.

It is a very simple design that allows multiple variations. Each panel has a vertically arranged pattern of green/blue plastic and aluminium tubes, the interplay of which contributes a slight organic motif to an otherwise geometric design. The repeated circles provoke interesting visual plays between positive and negative forms. Partially rotated

tubes add to the design a varying complexity of solidity and openness. An alternative title could be *Immodesty Screen* due to its play on concealing and revealing. The open nature of the screen, the lightness of the elements and the vertical structure allude more to suspended curtains than to that of a floor-based structure.

Fig. 45. *Tubescreen*, 2005.

During "Different Readings" the reaction was very positive to the screen, many people saying that it was one of the few works in the exhibition that explored conceptual concerns, rather than purely the visual effect or the material. As I stated in the catalogue; 'rather than presenting a visual barrier for concealment I am exploring the screen as an open form – one of reflection and shadow, repeated forms and unexpected visual effects.'[108] For the exhibition, all of the new works were placed with their referents. The difference between the Tubescreen and the original screen was, as expected, quite dramatic, but it was the unanticipated effect of its interplay with the other items in the room that was really successful. It cast complex shadows across a canopied bed, which could be seen through the screen, and the relationship of the pattern of circles to the intricate inlay on a nearby cabinet was also unexpected. I felt the exhibition was very successful as it presented the works in an unusual

[108] Catalogue, Different Readings exhibition, Allport Library and Museum of Fine Arts, 2005, p.28

and intriguing domestic and historical context, not in the separate aesthetic realm of the design gallery.

I feel the Tubescreen successfully integrates many of the concepts I am trying to express/realise in this project. Utilizing discarded, lower value, generic material from a local source, I designed a functional, visually sophisticated object and displayed it in the context of other high value contemporary design and craft objects. As further described in the conclusion, the Tubescreen is successful because its design considers the factors that I have come to realise are crucial in the context of the research project; the perceived value of the constituent materials and their availability, construction time and finish, and the potential value of the finished item. Aluminium and plastic, if well presented, have a higher perceived value in contemporary design thus allowing for a more complex, and time-consuming design. The design, while very simple, encourages an engagement with viewers through the variable possibilities of manipulating the pattern of tubes in the screen, and as the panels need no gluing or screwing to be joined to each other, they can be easily disassembled. The design of the Tubescreen also represented a change towards a broader definition of reuse, of more generic material and the possibility that these works, through the consideration of broader aspects, can express ‘more’, not ‘less’, than conventionally designed objects.

WaveScreen

Among the material I had acquired from Cadbury were 3mm Masonite sheets, previously used for transporting rolls of aluminium foil. These measure 800mm x 1180mm and have 24 regularly spaced 82mm

Fig. 46. Reused Cadbury packaging Masonite sheets, 2005.

holes bored in them. I was keen to utilise this material in my project as it represented, like the other Cadbury materials, a more generic, 'unrecognised' form of material reuse, that was also locally sourced and whose supply was ongoing. It is also, like the inner tubes, considered a mundane material not considered suitable for designed objects. Masonite is, however, an environmentally preferable wood-based fibreboard which (as mentioned in Chapter 1) does not employ glues in its manufacture but relies on resins within the wood pulp as binders. Using this material allows the possibility of designing an object that could, at the end of its useful life, be recycled back to nature. If combined with easy assembly and disassembly and a water-based finish, this has the potential to unite the durable with the ephemeral.

Fig. 47. Wavescreen (work-in-progress) 2005.

My initial ideas were to make curved cuts linking the holes, creating an outline like two circles pulling apart. These were also similar to the shapes I had explored in the *4-Track*. I also trialled other shapes including extended diagonal bulges that reconfigured the grid, and tear-drops. I felt the material could potentially be suitable for use in storage and hanging functions. As in the *4-Track*, I was keen to find alternatives to traditional storage

Fig. 48. *Wavescreen*, (work-in-progress), 2005.

solutions and thought of a storage screen, utilizing the holes and curved slots for temporary storage of jumpers, coats, gloves, umbrellas, even shoes. Like the *Tubesceen* it could be 'a screen of holes', providing degrees of solidity and openness. It also extended the visual motif of repeated patterns of circles. I did a number of experiments including: curving the sheets using a vacuum press and PVA glue, offsetting the holes, pushing part-inflated inner tubes through the holes, and fitting the aluminium and PVC tubes (that I had used in the Tubescreen) into the holes. I also thickness-sanded the masonite, bending the material to fit into, and protrude out of, the circular holes.

Fig. 49. *Wavescreen*, (work-in-progress) thicknessed and steam bent masonite strips 2005.

It was around this time, a little past half way, that I recognised the need to contain the project. While I had intended to utilize a number of local waste streams, just the materials from Cadbury were more than enough for my project, without also exploring other aspects of sustainable design such as newly developed sustainable materials, or developing my own materials. It seemed a good idea to focus on one aspect, one that had particular relevance to my practise - exploring the potential of local reuse in limited batch, contemporary craft and design. I was also beginning to recognise factors that could determine successful outcomes.

In the early stages of using the masonite sheets I had an unpleasant realisation – the bored holes were not identically spaced, but varied by up to 10mm. I had assumed that being industrially produced, their placement would be regular. However the holes must have been bored individually

using a loose template for alignment. This limited to an extent what I could do with the material. If the holes had lined up I had planned to laminate them in pairs and use the blue/green PVC tubes to link them structurally, as well as incorporate different functions and cut outs. I tried laminating 2 and 3 sheets together using several existing moulds, including a low, double curved 'S' shape. From these experiments I decided that a potential function could be that of a retail display and storage system, rather than for domestic use. I envisaged a sculptural wall, with a grid of holes that allow both display of goods and interplay of light and shadow, potentially lit from the front or back. I cut each masonite sheet into two squares of nine holes each and built a mould that allowed a repeatable, endless wave pattern when the shapes are placed side by side. To solve the problem of the misaligned holes I built a matching curved template with larger (90mm) holes from which to route enlarged identical holes on the laminated squares. The mould provided an even, low curve that made the routing possible.

Fig. 50. *Wavescreen*, (work-in-progress), 2005.

Fig. 51. *Wavescreen,* (work-in-progress), Mould for vacuum pressing, 2005.

Fig. 52. *Wavescreen,* (work-in-progess) Routing jig, 2005.

For the repeated pattern to work, the down and up curves had to be identical as did the distance of each corner of the square from the base of the mould. I laminated them slightly oversize and, with the use of a jig, trimmed them square on the circular saw allowing them to line up both in plan and section.

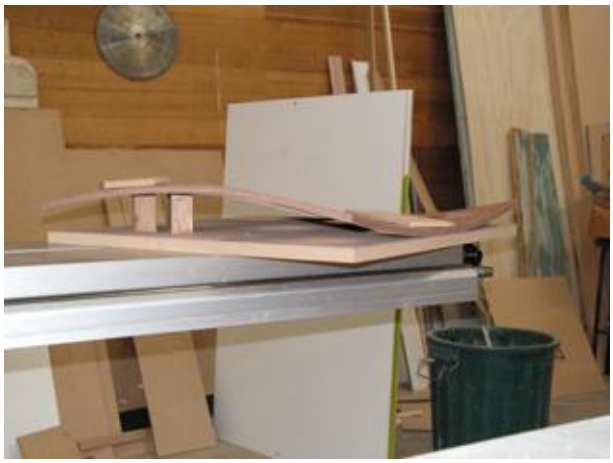


Fig. 53. *Wavescreen*, (work-in-progress) Saw Jig, 2005.
Fig. 54. *Wavescreen*, (work-in-progress) Mould in vacuum press, 2005.

I laminated the squares positioned diagonally to give the repeated forms more dynamism, also creating a wave profile where they met the floor. I decided that this simpler design was the most successful and excluded the cut-outs and tubes from the design, as the flow of the curve was enough without the need for more details. From my diary notes at the time I wrote; 'simplicity of an idea and of construction can be refreshing and dynamic, but also needs a "sensual" quality that some of the 1980s and

90s Dutch and German designs lack. Designs that engage with environmental concerns don't need to be removed from this "sensual" quality. Edwin Datschefski expressed this as the idea of a total, or completely "good" design.'[109]

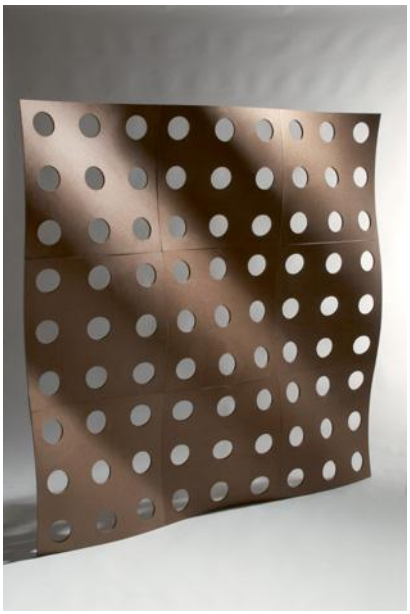


Fig. 55. *Wavescreen*, (work-in-progress) 2005.

CD lights

The development of this design was influenced by a number of factors. I was given a quantity of used digital storage CDs, stacked without cases on a steel rod. I was struck by the visual effect of light passing through the discs when viewed edge-on. I returned to the idea of using slot car track, but instead of storage (for music CDs in cases) I explored the idea of lighting, utilizing the capacity of the track to transfer low voltage power, and the ability of discs to glow along their edge. While writing about the ***4-track* CD storage** however, and

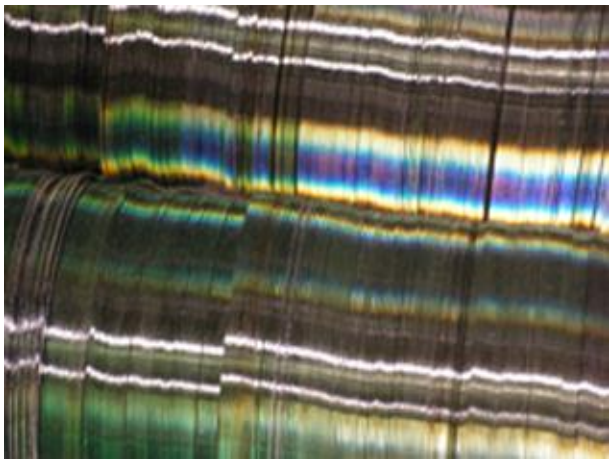


Fig. 56. *CD light*, (work-in-progress) 2005.

[109] Datschefski, E. 2001,*The Total Beauty of Sustainable Products*, Rotovision, Crans-Pres-Celigny, p.8

considering Ron Arad's solution of a spring to provide a storage solution for magazines (1998), I realised I could discard the slot car track in favour of a spring to provide a means of holding individual discs vertically. This solution then allowed me to form them into a curve, not unlike curving a 'slinky' into a donut shape. The spring provided a means of holding the discs (at their edge) in place and spacing them evenly, while a clear curved tube fed through the central hole of each disc allowed a light source to be located at points within the discs. I decided that a semi circular design, with a supporting back of clear acrylic, would provide both structural support (for the discs) and flexibility in enabling a range of lighting solutions. These included being individually wall-mounted, or back-to-back (suspended, floor or table mounted).

rad, *Magazine Rack*, for

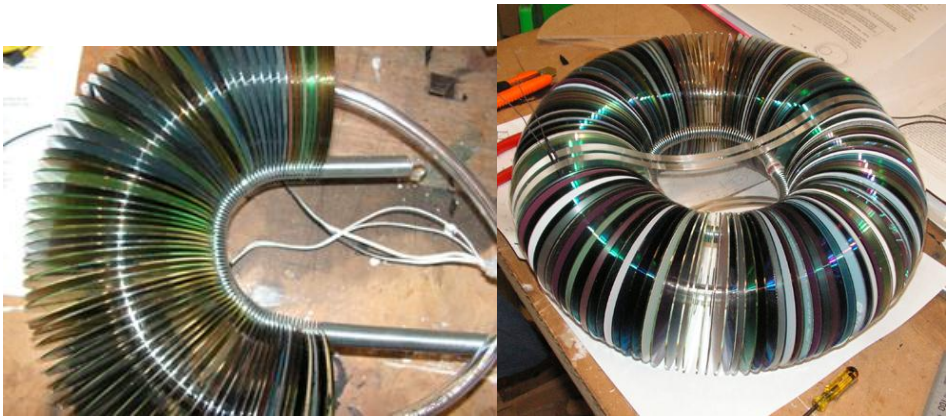


Fig. 58. *CD light,* (work-in-progress) 2005.

I explored a range of lighting options including low voltage model-making lights, Christmas rope-lights, string-lights, LEDs and fibre optics. Searching for a power source that was flexible, compact, adaptable, affordable and bright, I decided that LEDs were the best solution for individual lights, while rope lights worked best when combining a number of CD Lights together. In addition to power sources, I have explored other light effects (with power on or off) by applying self adhesive coloured film to the face of the discs, achieving a complexity of reflection and colour while helping to obscure their origins. The circular form of the materials and object are, I feel, successful in the context of the project. The use of low value materials transformed into a high value product also meets my aim of finding the

precious in the mundane

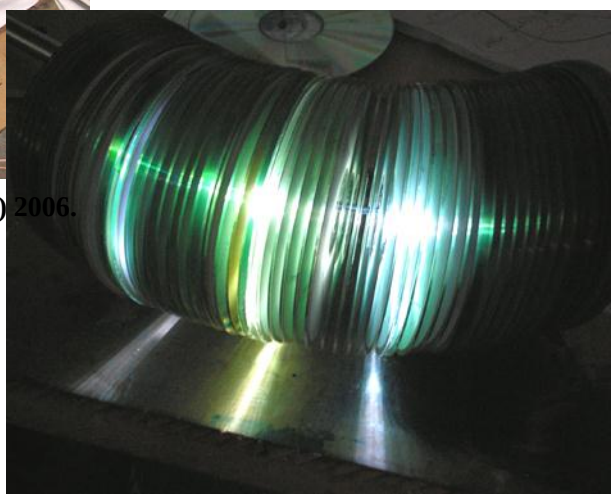


Fig. 59. ***CD light,*** **(work-in-progress) 2006.**

Also, while the perceived value of the materials is low, the simple but clever and well-finished design, combined with the higher perceived value of lighting, contribute to a high perceived value of the finished product.

Fig. 60. ***CD light,*** **(work-in-progress) 2006.**

Summary

The development of the practical research began with a broad horizon and gradually focused, alongside the written research, on specific aspects and approaches significant to my practice. My focus on more sustainable approaches was directed to material reuse, within the context of designing and making furniture and lighting objects in limited edition/ small batch production. Through the practical research I gradually came to recognise factors that could determine successful outcomes, and these provided a guide for exploration in the later work. From an initial focus on materials developed a particular aesthetic of *repetition*, circularity and simplicity. As stated by Ronan and Erwin Bouroullec[110] 'repetition generates a certain visual complexity.' This is perhaps most apparent in the *Tubescreen*, with its endless variations of pattern, reflection and form. In the design of the *Inflatables*, repetition is also important, as variations on a simple form and structure. *Recognition* has also been an important consideration in the practical research. Recognition (in unexpected reuse

[110] Bouroullec, R &E 2003, *Ronan and Erwin Bouroullec*, Phaidon, London, 2003, P.86

of mundane materials) can open up possibilities for more sustainable design options. It can also provide greater engagement with objects. In the practical research I have explored degrees of recognition in each of the finished works, as well as those submitted as support material, from the explicit (Video Screens) to the partly-hidden (Wavescreen) to the hidden (Tubescreen). An important aspect of the project was to move beyond simple recognition of the source materials towards more sophisticated material reuse, where ambiguity can enhance the viewer's imaginative interaction with the work. In each of the finished works, commercial viability was also an important consideration. In the following chapter I will sum up the project, considering the outcomes and contributions.

Conclusion: outcomes and contributions

In this project I have incorporated sustainable approaches within my practice while considering value, meaning and personal attachment in the products I make. In the exhibited works I show that consideration of aesthetics, function and environmental ethics can mutually reinforce each other in the production of an intentionally positive form of meaning. Value and meaning *emerge* from emotional or evocative responses, and the poetic potential of the re-contextualising of humble materials just as

much as from the monetary value of the materials or the functionality of the design. Through the development of the research project I have recognised that our need to live with objects, and our desire to reduce the environmental impact of the production of those objects, can potentially be reconciled. Just as more (objects) need not mean less (resources), incorporating material reuse and other sustainable approaches can lead to more, not less, engagement with objects. If an object is designed with sustainability as a fundamental consideration (along side aesthetics, concept and function) the meaning of, and engagement with, the object can be enhanced.

In this project, I have developed practical, producible objects. I believe that these demonstrate that designing for sustainability (in this case, employing material reuse) can adequately fulfil all the usual requirements of furniture design, while addressing wasteful practices. As a designer/maker of limited edition and small batch production items I believe a local focus is important in designing for sustainability, by utilizing locally available reusable materials, manufacturing capabilities and networks of knowledge. The project has not aimed to solve the problem of an unsustainable economic system, but in recognising it as a problem, one can begin to address it in the particular context of one's life. As Matali Crasset says 'I've been taught a profession that consists in making objects, so I do my best to design these objects, so that they can, one by one, form a brick in the building of an evolution.'[111] The complimentary opposites (mundane/precious, durable/ephemeral) which I have explored in my written research have informed, and been informed by, my practical research. Through my use of 'humble' materials I have come to realise that the mundane is not necessarily antithetical to the precious but can in fact carry great emotional value and significance. Similarly, the durable is not necessarily in opposition to the ephemeral in so far as the durability of an object can be enhanced by the ease with which it can be disassembled and reassembled or reconfigured into

[111] Cassagnau, P & Pillet, C 1999, *Starck's kids?*, Editions Dis Voir, 1999, Paris, p.87

something else. I have argued that engagement with objects and more sustainable approaches to design are indeed complimentary facets of one approach, and that it is possible in a range of designs to unite them to form an intentionally positive aesthetic. While my focus in this project has been on limited edition furniture and object design I believe this approach is also applicable in other areas of design such as product, interior or fashion design.

Development of circular motif

Designing with reuse materials is different in many ways to designing with new materials. In consideration of form, designing with reuse materials is at once more restrictive *and* more liberating. Reused materials are not a blank slate. Forms, suggestive or prescriptive, come with the materials. The advantage of this to a designer is that the materials themselves can provide a visual theme to tie things together. The designer, of course, plays a part by selecting or prioritising certain materials that will allow his/her preference of forms to be expressed. In the case of this project, my initial intention was to restrict personal aesthetic choices in the early stages in favour of an openness to possibilities provided by mundane, neutral materials. As the project progressed a recurring circular motif became apparent. This development, while unexpected, was perhaps inevitable and once recognised provided an insight into the benefits of designing with reuse materials. The circular motif was selected from the materials and provides a common form that holds the exhibited works together. Once recognised it provided a guide for further exploration. This suggestive ability of reused materials (whether of formal, structural or conceptual qualities) can provide a diversity of possibilities. This at once challenges and liberates the designer - as 'interpreter', not 'sole creator' - providing a wealth of opportunities for creative possibilities, free from the *restriction* of the clean slate. Reuse can also contribute to, and enhance, the other varied considerations that each design project entails.

'Raw' Materials

The development of this project has also made me aware, particularly in the use of the Cadbury materials, of the possibilities for future exploitation of other 'waste streams'. In the use of one group of materials from one supplier, I have explored just some of the many possibilities. I feel that there is great potential of establishing a network of potential 'raw' materials suppliers. This has already begun with the Tasmanian Waste Exchange (TWEX) set up in Tasmania by the Department of Primary Industries, Water and Environment (DPIWE).[112] However this could be greatly expanded to provide for a range of specialised materials that are currently discarded. Every business has 'waste' that another could utilize. This circuit/cycle of material use could potentially produce new businesses, enhanced and supported by design. I believe it is the economic potential in these wasted 'raw' materials, in parallel with environmental awareness, that will cement sustainability as an accepted part of economic and social life.

Through the development of the practical research I have identified important factors to consider when designing with discarded and low-value materials and have developed an assessment tool that helps to evaluate materials for their suitability for reuse in the context of a contemporary furniture designer/maker practice. An important consideration is the limitations on *availability of materials*. This is not a problem to be solved by only using unlimited materials or finding more readily available materials. Rather, the design of the object needs to be consistent (reconcilable) with the limits on the availability of the materials. The approach is one of designing to limitations rather than trying to eliminate or circumvent limitations. For example, if a material is available in high volumes, this provides for potential medium volume production of pieces at medium cost. Other considerations would include ease of construction, ease of transport, flexibility of product and compatibility of supply for different materials in the same product. If a

[112] www.dpiwe.tas.gov.au/inter.nsf/WebPages/EGIL-53M7AH?open

material is available in only low volumes, this could provide for potential one-off or small run objects of higher value, taking into account quality of finish, fine details, and unique appeal.

A design philosophy of reuse therefore differs from designing with only new materials in that one designs not just to the properties of the available materials, but to their availability, and rather than being a matter of solving existing design problems, it is more a matter of restating and reformulating problems specific to the reuse situation and formulating solutions specific to those problems. This approach clearly differs in comparison with industrial mass production problems, that is how to make it fast, cheap, in large volumes in readily available materials and how to design a product that appeals to as many buyers as possible. Important problems to consider when designing for reuse in furniture or product design include how to:

-match the design to the properties of the available materials
-create a sense of value in a product made of reused materials
-design with reference to the specific availability of the material
-design with reference to the perceived value of the materials.

In regard to the value of the materials, I have recognised two points to consider. Low cost materials that are obviously inexpensive (for example cardboard, masonite or inner tubes) need to be designed into low/medium price objects that are simple but clever and very cleanly and neatly finished. If the materials have a higher monetary value or can be finished in an original and refined way (for example plywood, aluminium tubes or acrylic) they can be used in higher price products (though still well finished) of more complex and sophisticated design. Value can be considered as economic value or perceived value (which may include issues of status), but these are not always clearly aligned. Objects made from cheap materials can still have a high value where value is

understood in terms of the meanings or emotional attachments they can engender. The following table summarises my findings.

	Low/Medium Price High Volume	**High Price Low Volume**
Material availability	High	High or Low
Perceived value of materials	Low to High	Medium or High
Time or cost required to achieve high finish	Low	Low to High
Design complexity and sophistication	Simple but clever and well-finished	Complex or sophisticated and displaying high workmanship
Perceived value of finished product	Low to Medium	High

Table showing successful combinations

A less successful example would be where low material availability was combined with low perceived value materials. If the masonite (low perceived value) was only available in small quantities then the *Wavescreen* design would be less successful, as the time spent on developing the production method could not be returned in the form of ongoing sales. Another example of a less successful combination would be using low perceived value materials *or* simple, unsophisticated design with complex, time-consuming construction or finishing. When using low perceived value materials, a design must be simple, clever and well-finished. The early design for the *Tubescreen* using cardboard tubes was time-consuming, but was neither sophisticated nor well-finished.

Below are some examples from the practical research, taking into account perceived value and availability of materials in assessing their suitability and success.

Inflatables – These are successful because they are simple to make and funky and appealing, using readily available reuse materials (inner tube) of obviously low (monetary) value, but are combined with well-finished reuse plywood and new fittings giving a sense of a refined, high perceived value object. They are easy to produce in larger numbers, at relatively low cost, and the materials are available in large volumes.

Wavescreens – These are successful because while masonite is of obviously low (monetary) value, the product is capable of high volume/lowish cost production and is refined and cleverly finished. The materials are available in larger, ongoing volumes. Most time is spent on developing the production method for repeat runs rather than the actual making of the piece.

Tubescreen – This is successful because although the materials (aluminium tubes) are no longer available they have a higher perceived value. This allows for the piece to be more complicated to make and one-off – so is a good use of materials. The time-consuming nature of its construction is off-set by its high perceived value as a unique, well-designed and well-finished object.

CD Lights – These are successful because the materials are available as an ongoing supply. Also, while the materials are of low perceived value, the design is simple and clever, and through the interesting light effects (both with power on or off), the perceived value of the finished object is high. Also, the time and cost required to achieve a high finish is relatively low.

The project has achieved, in a measured and considered way, a means of addressing the designing and making of objects considering environmental, ethical, aesthetic and commercial considerations. I believe the results of this project are also of relevance to a broader context beyond my own practice. The project has shown that engagement with objects and sustainable approaches, when considered as integral to a

design's development, can be mutually beneficial and lead to aesthetically sophisticated and highly valued objects.

Appendix 1
List of Submitted Works

1. **Inflatable 1,** 2005, reused inner tube, reused Cadbury packaging plywood, steel bolts and nuts, castors, ceramic bowl, 700 x 700 x 245
2. **Inflatable 2**, 2005, reused inner tube, reused Cadbury packaging plywood, steel bolts and nuts, castors, 1050 x 1050 x 320

3. **Inflatable 3,** 2005, reused inner tube, reused Cadbury packaging plywood, steel bolts and nuts, castors, 930 x 930 x 330
4. **Inflatable 4**, 2005, reused inner tube, reused Cadbury packaging plywood, steel bolts and nuts, castors, 1400 x 1400 x 420
5. **Tubescreen**, 2005, reused aluminium and PVC tube, aluminium tube and flat bar, 1520 x 1685 x 85
6. **Wavescreen**, 2006, reused Cadbury packaging masonite, HDPE plastic, plywood, 2200 x 1680 x 370
7. **Wavescreen**, **(wall-mounted)**, 2006, reused Cadbury packaging masonite, HDPE plastic, plywood, aluminium tube, threaded rod, 3930 x 2245 x 200
8. **CD Lights (pair)** 2006, reused compact discs, acrylic tube and sheet, LEDs, steel spring, 350 x 360 x 120
9. **CD Lights (group of three)** 2006, reused compact discs, acrylic tube and sheet, LEDs, steel spring, each 350 x 180 x 120

Appendix 2

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Appendix 4

Curriculum Vitae – Richard Skinner

Education

2004	Enrolled in MFA program, University of Tasmania, Graduation Feb'06

1987 Bachelor of Fine Arts, University of Tasmania, Hobart

Selected Awards

2004 Postgraduate Research Scholarship, University of Tasmania

2002 Arts Industry Development grant, Arts Tasmania

1999 Arts Events grant, Arts Tasmania, with Vicki Sauvage

1999 Exhibition Development Fund grant, Contemporary Art Services Tasmania, for collaborative installation 'L'ambiente' at CAST Gallery in 2001.

1996 Winter Design School-Sustainable Design, RMIT, Melbourne, TAAB grant

1991 Australia Council grant, Studio Residency, Tokyo

Solo Exhibitions

2000 'Nozomi', Sidespace Gallery, Salamanca Arts Centre, Hobart

Selected Exhibitions

2005 'Home Again', CAST Gallery, Hobart

2005 'Different Readings', Allport Museum, State Library, Hobart

2003 'Designer Makers Tasmania', Waterside Pavilion, Hobart

2001 'L'ambiente', CAST Gallery, Hobart

1997 'Luminaries in the Shadow Factory', Moonah Arts Centre, Hobart

1996 'Points of Diversity', Tasmanian Museum and Art Gallery, Hobart

1995 'Threads of Passage', Queen Victoria Museum and Art Gallery, Launceston

1994 'Designs by Richard Skinner and Guy Dyas', IDEE Shop, Minami-Aoyama, Tokyo

Selected Commissions

2000 Light Structures for 'Beat Factory'dance music event, Hobart City Hall, with Poonkin Khut

1989 Outdoor Sculpture, Elizabeth College, Hobart
Art for Public Buildings Scheme, Tasmanian Government